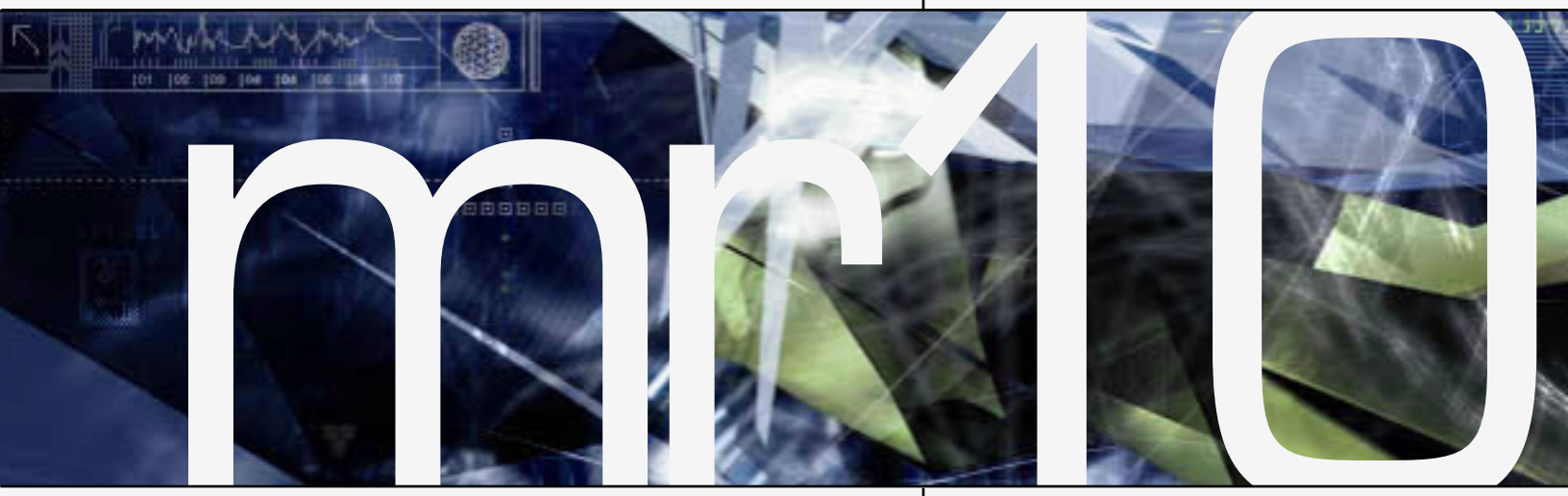
PORTA ONE®

Porta Billing 100®

Maintenance Release 10



Administrator Interface

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Administrator Interface
V.1.10.3, December 2004, Maintenance-Release-10

Please address your comments and suggestions to Sales Department, PortaOne, Inc., Suite 400, 2963 Glen Drive, Coquitlam, BC, V3B 2P7, Canada

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Preface

This document provides a general overview of the PortaBilling100 administrator web interface.

Where to get the latest version of this guide

The hard copy of this guide is updated at major releases only, and does not always contain the latest material on enhancements occurring between minor releases. The online copy of this guide is always up to date, and integrates the latest changes to the product. You can access the latest copy of this guide at:
http://www.portaone.com/resources/documentation/

Conventions

This publication uses the following conventions:

- Commands and keywords are in **boldface**
- Terminal sessions, console screens and system file names are displayed in `fixed width font`

Caution means 'reader be aware'. You are capable of doing something that might result in a program malfunction or loss of data.

NOTE: Means 'reader take note'. Notes contain helpful suggestions or references to materials not contained in this manual.

Timesaver means that you can save time by performing the action described in the paragraph.

Tips are information that might help you to solve a problem.

Document Objectives

The target audience of this document are system administrators, VoIP engineers, and system or helpdesk operators.

To implement PortaBilling, you need to understand the following:

- General UNIX operating system environment (the examples in this document are written for FreeBSD)
- VoIP architecture, concepts and technologies (general knowledge)
- RADIUS
- SQL databases (the examples in this document are for MySQL)

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How to Get Technical Assistance

The dealer who you purchased this product from is the *first place* you should go for technical assistance. The dealer is usually the most qualified source of help, and is the one most familiar with your system and how this product should be installed. Many dealers have customer service and technical support programs that offer varying levels of support, depending on your needs and computer knowledge.

If your dealer cannot assist you

If you cannot get assistance from your dealer, the vendor provides varying levels of technical assistance.

PortaOne's Customer Support Service (e-mail: support@portaone.com) can supply quick answers to specific inquiries regarding product features and technical questions. You can visit our website (**http://www.portaone.com**) for more information.

Hardware and Software Requirements

Client System Recommendations

- OS: Windows 95-XP, UNIX or Mac OS
- **Browser:** IE 6.0, Mozilla 1.6, Netscape 7.1 or later. Cookies & Javascript must be enabled
- Spreadsheet processor (MS Excel)
- Display Settings:
  - Min. Screen Resolution: 1024 x 768
  - Color Palette: 16 bit color (minimum)

NOTE: To view downloaded CSV (Comma-Separated Values) files in Windows, please do the following to match PortaBilling's default list separator: My Computer -> Control Panel -> Regional Settings -> Number -> List Separator type ",".

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1. Introduction

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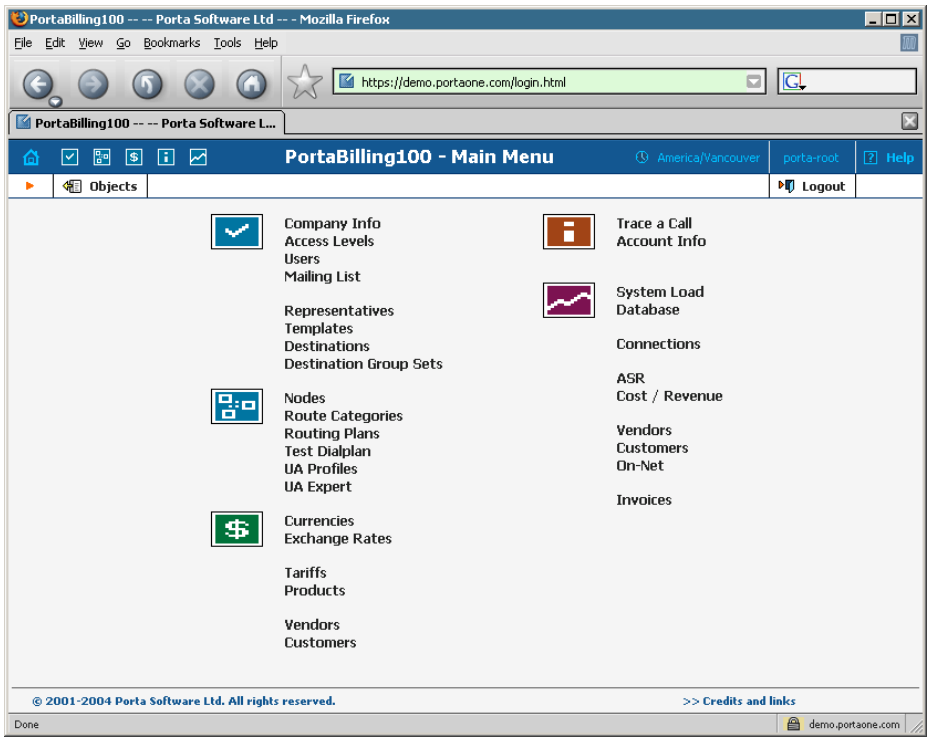
PortaBilling's front-end design and functionality are simple and intuitive. The PortaBilling home page's web interface is the main point of entry to all the system's objects and tools. Divided into five functional blocks, the links below load pages containing tools for system management, VoIP networking, billing, helping customers, and generating statistics. Each second-level page contains a link back to the home page.



The five functional blocks are:

Management

Normal system maintenance tasks, such as adding administrative users and maintaining the destinations database.

Networking

Configuration of network components: registering new nodes (network endpoints) in the system; configuration of User Agent profiles.

Billing

Tasks related to billing, such as customer, vendor and account management and rate plan definition; maintenance of currencies and exchange rates.

Help Desk

Tasks available to help desk staff to assist in troubleshooting problems which clients may inquire about.

Statistics

A variety of statistics and reports are available, reflecting the status of the system or providing information on call records, costing and revenue.

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PortaBilling Security

PortaBilling100 is compliant with Visa Security Standards.

User Interface

- Inactivity logout
- Unconditional logout

User Passwords:

- The minimum password length is six (6) characters. In the case of long passwords, only a certain number of the leading characters will actually be used (however, at least eight (8) characters).
- Passwords include both alphabetical and numerical components.
- Passwords are stored under irreversible encryption.
- It is required that the current password be used before allowing a new password to become effective.
- The user's last four (4) passwords cannot be re-used (see the note above about long passwords; new passwords must differ in at least one of their first 8 characters).
- It is prohibited to change a password within one (1) day of the previous change.
- The initial password must be changed on the first login.
- Passwords must be changed at least once every 30 days.
- Use dictionary checking to restrict password selection.

Credit Card information

- Credit card information is displayed as 1234xxxxxxx567
- Credit card information is stored using the same encryption as for the Payment System password.

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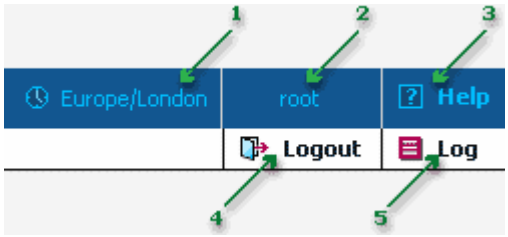
Common Features

All of the functions available from the home page are also available using the drop-down menus:

The Home icon on the left also contains a menu with shortcuts to all the other PortaBilling interfaces:

Admin - Shortcut to this interface; same as clicking the Home icon
Customers - Customer Self-Care Interface
CC-Staff - Customer Care Staff Interface
Accounts - Interface for account owners, also accessible by the system administrator via Customers -> Accounts -> View CDRs
Vendors - Interface for your termination partners

The top right-hand side of the interface provides users with the following information:



1. The time zone where the current user operates. Hover the cursor over this link to select a time zone for your current session.
2. Login name of the user currently logged in.
3. Context help for the current screen. Clicking this link will pop up the Help window.
4. Logout button. Used to finish the current session or, when necessary, to re-login as another user.
5. View Log. This link is only available to users with corresponding access rights and where applicable. Clicking it will pop up a window showing all logged activities performed on the current screen.

On the toolbar there is often also a list of the available actions relative to the current page:

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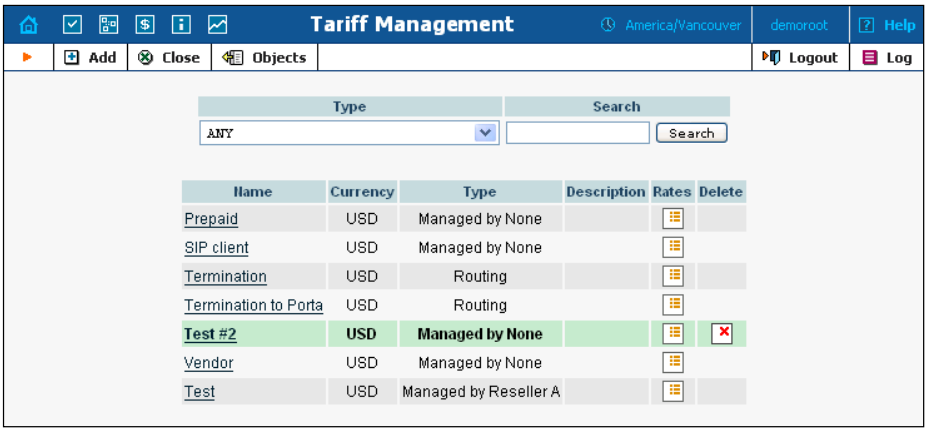
This toolbar acts as the equivalent of the "File" menu for the application, i.e. it is the usual location for the "Save", "Close" and "Add" operations.

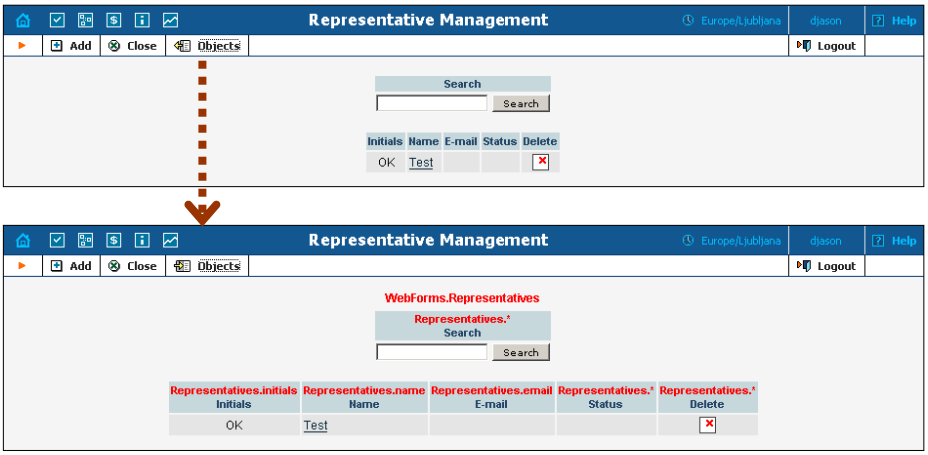
Delete an object in the database

If you see the icon next to an object name in the list of objects, this means it can be deleted from the system. Note that only objects which are not used elsewhere in the system may be deleted. For instance, in the screenshot below only the **Test #2** tariff can be deleted, as the rest of tariffs are being used by some product or connection.



Show Objects

The Objects icon is only available to the Root user; when selected it shows the object properties, as seen in the illustration below. These object properties can be used by the administrator while configuring access levels for certain users in the system. See the **Access Levels** section for more information.



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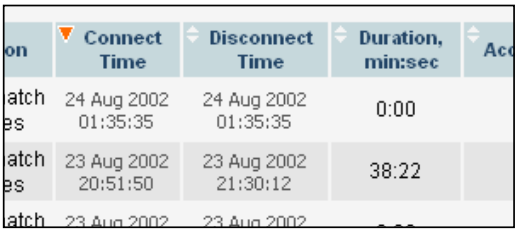
Sorting Tables



This feature is available for all CDR browsers, where it necessary to sort the displayed information according to different criteria. The table header cell with the orange triangle shows the sorted row. A triangle pointing downward indicates descending order, while a triangle pointing upward means ascending order.

Sorting is available for all columns with a bi-directional white arrow in the top left-hand corner of the header cell. To sort a column, simply click on the header; click the same column again for the opposite sorting order.

Another handy feature for sorting tables is that the table header is always visible, even if you scroll to the bottom of a large table which does not fit completely on the screen.

Multiple languages

PortaBilling uses a flexible and extensible localization system. Every user of the system (admin user, account, customer, vendor, customer care admin) can choose the language of the web interface for his session. This of course does not affect other users; thus user John can work with the system using English as his interface language, while user Peter can make use of Chinese simplified as his language. Currently, PortaBilling supports such commonly-used languages as Arabic, Chinese, French, German, Portuguese, Russian and Spanish, in addition to English. New languages may easily be added on request; please contact Porta Software to obtain the XML template files if you would like to perform the translation yourself.

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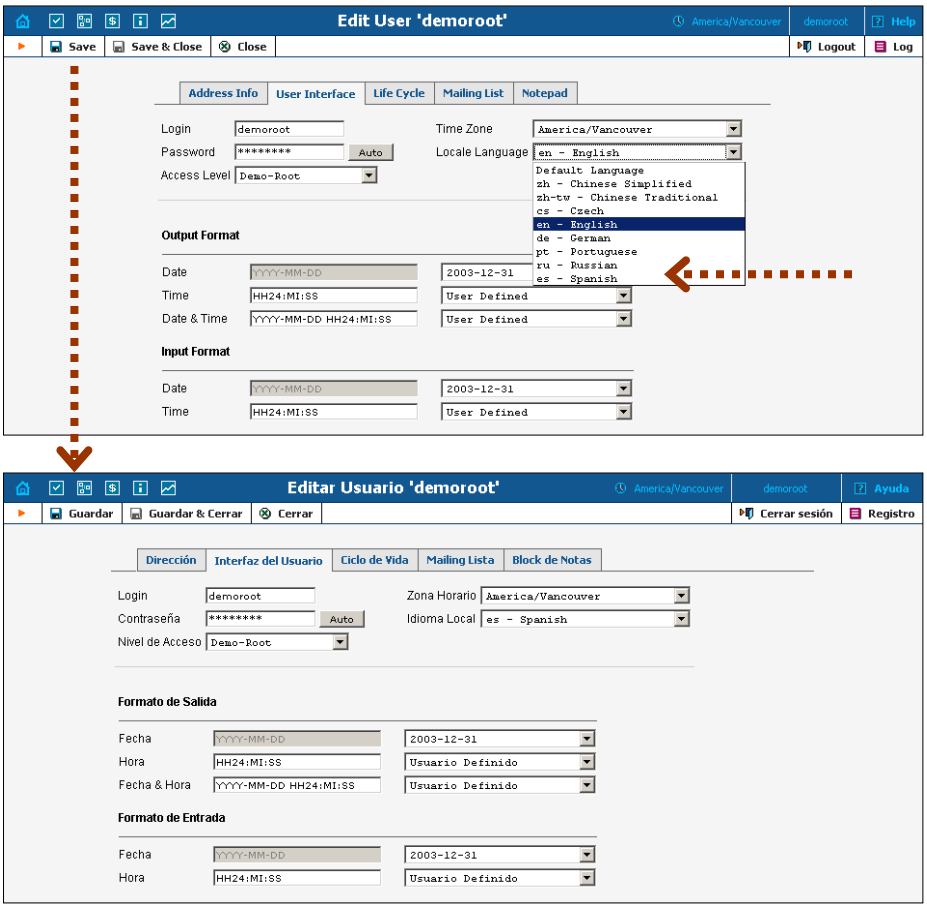
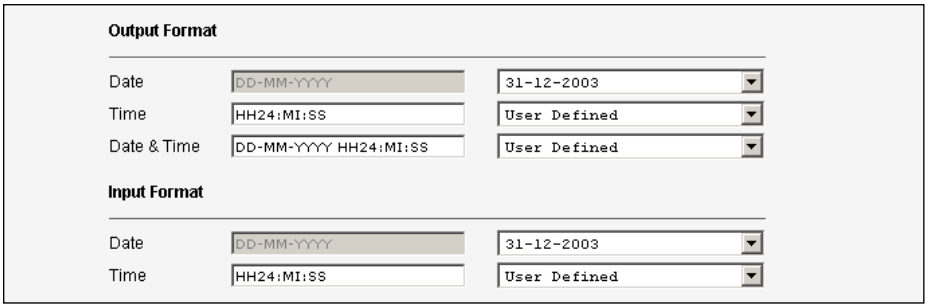


Date & Time Format

PortaBilling allows users to define both the input and output formats for date and time.



Making changes to the date and/or time format on this page enables users to enter dates and times in the desired format throughout the entire PortaBilling100 web interface. Correspondingly, all pages generated at a user's request will contain the date and time in the previously set-up format.

Date/Time format strings are composed using specifiers which represent the values to be inserted into the formatted string.

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In the following table, the specifiers are given in upper case. Formats are case-insensitive.

Specifier	Value	Description
Date		
DD	01-31	Day of the month
D	1-31	Day of the month without a leading 0
MM	01-12	Number of the month
MON	Jan-Dec	Name of the month
MONTH	January-December	Full name of the month
YYYY	2003 +	Year
YY	00-99	Last two digits of the year
Time		
HH, HH24	0-24	Hours
HH12	0-12	12-hour time format; requires AM/PM Specifier
MI	0-60	Minutes
SS	0-60	Seconds
AM, PM, AM/PM	AM, PM	
Separators		
A separator can be any symbol except for letters and digits, or may be left blank		

Example	Value
DD/MM/YYYY	12/03/2003
MON-DD-YY	MAR-12-03
HH:MI:SS	12:30:00
HH12 MI:SS	WRONG! AM/PM Specifier is missing
HH12mi pM	1230 AM

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2. System Management

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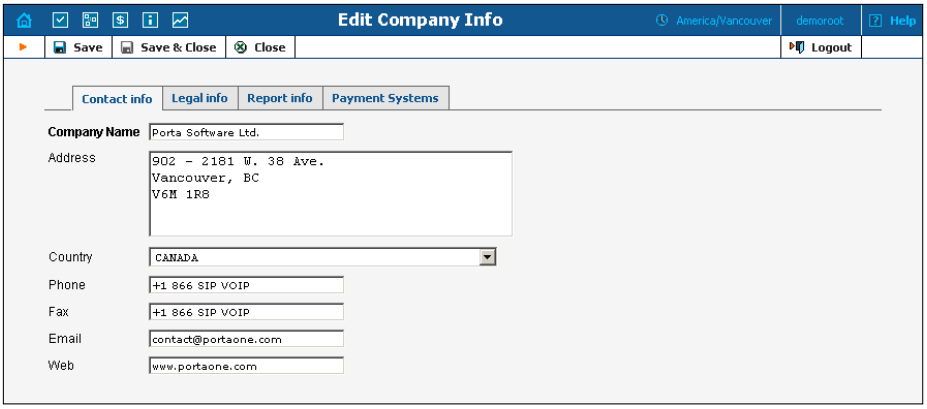
Company Info

The Company Info screens allow the administrator to maintain corporate information relating to your business. This data will be included on reports such as invoices.



Contact Info

The information provided in the Contact Info tab is typically used on reports as the primary point of contact for your vendors and customers. This information would be the same as that which appears, for example, on your letterhead and business cards.

Field	Description
Company Name	The conventional form of your company's name. (For example, "EasyCall, Inc.")
Address	Street address of the company.
Country	The country may be selected from a drop-down list.
Phone	Primary telephone number for the company.
Fax	Primary fax number.
E-mail	Primary e-mail contact for the company.
Web	Web address of the company.

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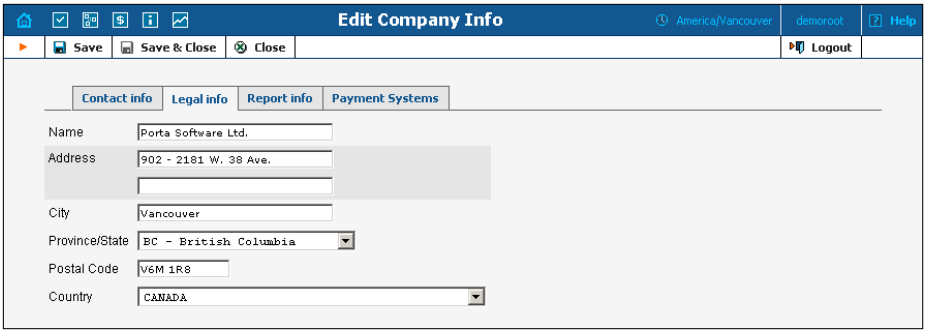
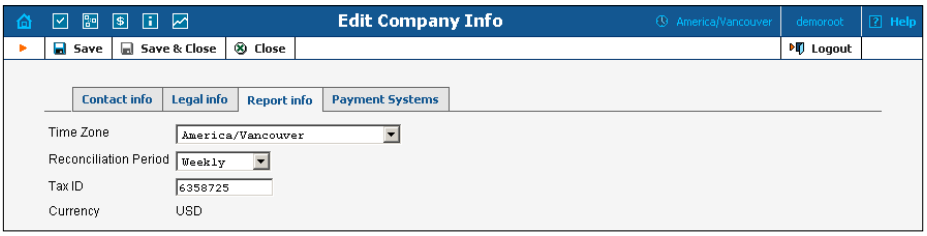
Legal Info



The Legal Info tab allows you to enter information about your company that could be used for any legal transactions, e.g. for taxation purposes.

Field	Description
Name	Proper, legally-recognized form of the company's name.
Address	Address where this company name is legally registered. Two lines are provided.
City	City in which the company is legally registered.
Province/State	The province or state where the company is registered may be selected from a drop-down list, depending on the Country option selected.
Postal Code	Postal code for the company's registered location.
Country	The country in which the company is legally registered.

Report Info



The data contained in the Report Info tab may be used for any financial reports, e.g. for invoicing or taxation purposes.

Field	Description
Time Zone	Time zone in which global reports for the environment (e.g. Cost/Revenue Report) will be generated.
Reconciliation	One of the following: daily, weekly, bi-weekly,

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Period	monthly, or semi-annually. This will also set up the periodicity of the **On-Net Reports**. (See the Statistics section below.)
TaxID	Locally-designated tax number.
Currency	The company's internal currency. You can use different currencies for your customers or vendors, but Cost/Revenue Reports will be generated in this currency. The value for this parameter is set permanently for the new environment, and cannot be changed later.

Payment Systems

The Payment Systems tab lists all existing Payment Systems, and allows you to enter information related to payment gateways used for receiving payments from customers. One or more Payment Systems may be utilized for electronic payments. In order to make use of these services, you must first register with one of the currently-supported* merchants, as shown below:

Name	Web Page
2CheckOut	**www.2checkout.com**
AuthorizeNet	**www.authorize.net**
BankOfAmerica	**www.bankofamerica.com/fmerchantservices**
Beanstream	**www.beanstream.com**
Cardstream	**www.cardstream.com**
eSec	**www.esec.com.au**
iAuthorizer	**www.iauthorizer.net**
Ingenico	**www.ingenico.com.au**
LinkPoint	**www.linkpoint.com**
Network1Financial	**va.eftsecure.net**
PayflowPro	**www.verisign.com/products/payment.html**
SurePay	**www.surepay.com**
TCLink	**www.trustcommerce.com**
VirtualNet	**www.vitalps.com**
WorldPay	**www.worldpay.com**

* Supported means that a corresponding Business::OnlinePayment plugin module is available at **www.cpan.org**. This does not guarantee that the module will support all the required features, and some extra work may be required to integrate it into the solution and perform testing. Please contact **support@portaone.com** for a current list of payment modules which have been thoroughly tested and can work "out of the box", such as AuthorizeNet.

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To add a new Payment System, click **Add** and enter the Account Name, Login, Password and Merchant in the edit row at the top of the listing. To edit an existing account, click **Edit** and copy the information from the current row to the form above. Save changes using the **Save** button. Recurring payment allows customers to set up periodical payments on this payment system. Payment systems with recurring payment enabled are indicated by this icon .

Test Mode is a special mode of interaction with the system which is useful during the initial setup phase, when a merchant may want to test its setup without processing live card data.

What is Payment Processor?

Payment Processor is a real-time transaction-processing system that functions as a payment service using a secure transaction server on the Internet. Merchants with a valid merchant account at an acquiring bank ("Payment System") can use this system to submit, authorize, capture and settle credit card or eCheck transactions without the need for a separate transaction terminal.

Payment System basics

This section is provided for information purposes only. The terms and conditions of your Payment System are subject to agreement between you and your bank or merchant service provider, and should be consulted for specific information relating to your Payment System.

A Payment System is required to accept credit cards using the system. A Payment System is a special account with a bank that is a member of the Visa and MasterCard associations (American Express may also be part of your Payment System). Such a bank has been certified by the Visa and MasterCard associations and can provide you, as the merchant, with all the services related to your Payment System.

You *must* have a credit card Payment System in order to use a Payment Processor for credit card transaction processing. A Payment Processor system is separate from your Payment System, but it may be purchased at the same time from the bank or merchant service provider which is creating your Payment System.

The merchant service provider normally does the following:

- Assigns you a Payment System number.
- Sets up your Payment Processor account.
- Assigns you a Login ID and password for use with your Payment Processor account.

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- Acts as your main point of contact for basic issues regarding your Merchant and Payment Processor accounts.
- Enables you to add certain types of credit cards to your Payment System.
- If the merchant service provider is also your Payment Processor reseller, it also activates the processing capability for these cards on your Payment Processor account.
- Deposits credit card funds to your account.

Your merchant service provider may also provide you with MID and TID numbers. The Payment Processor does not need these numbers, but some third-party solutions (such as certain Shopping Cart providers) may require them.

Once your Payment System is set up and "live" on the credit card system, you can begin accepting credit cards from customers. It is your responsibility to configure the Payment Processor system to meet your own needs, and to provide a hosting environment which is appropriate for the choices you have made within the Payment Processor system.

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Access Levels

Introduction to the ACL System

Different types of users have different responsibilities within the billing system. Some users may not be allowed to use or see certain portions of the system. To this end, PortaBilling supports the concept of **Access Control Lists** (ACL). ACLs allow the PortaBilling100 administrator to decide, for example, that a particular sales representative can look at customers' data, but cannot create new customers.

ACLs allow you to control what users of your site can and cannot do. Without such restrictions, it is almost impossible to guarantee that users will see or change only the information that they are allowed to.

ACL Types

An access level can be one of the following:

- Account
- CC Staff
- Component (cannot be assigned to users; used only as a building block to construct other access levels)
- Customer
- User (access level for users of the admin interface)
- Vendor

These levels are composed of permissions and, optionally, other components. A permission is the lowest level of access control resources. It contains a set of permissions that are granted when using a component.

The difference between a User ACL and other types is that a User ACL will appear as an Access Level when creating a new user or modifying an existing user's details.

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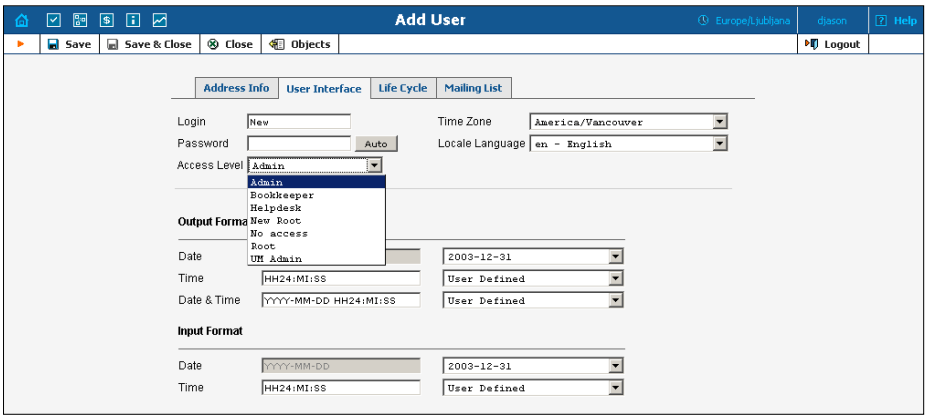
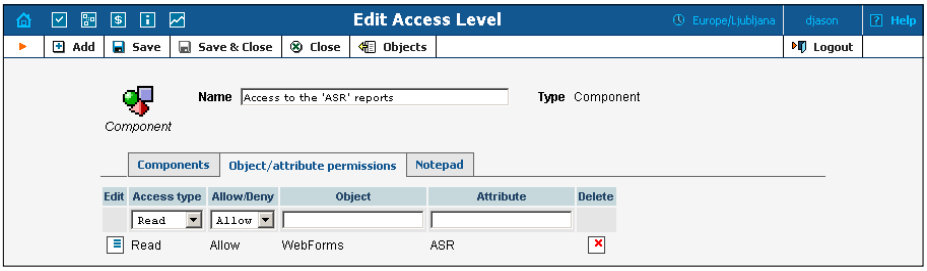


Permissions

A permission is the fundamental unit of exchange in the PortaBilling100 security model. Permissions are composed of the access type, whether or not this is an allowed action, the relevant object, and the relative attribute of the object.

Let's take the example of ASR reports. An access level called "Access to ASR reports" is provided within the PortaBilling100 installation. It defines only one permission, which appears as in the following screenshot:



The "Access type" is set to "Read", and the permission is to "Allow". This permission applies only to "WebForms" objects which have the attribute "ASR".

There are four possible access types:

- **read** - view the specified resource
- **update** - modify the resource
- **insert** - create new instances of the resource type
- **delete** - remove instances from the system

The field "Allow/Deny" defines whether this permission is being granted or withheld.

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You should never have to provide fine-grain permission information yourself, as all possible permissions are already encapsulated in the components of your PortaBilling100 installation. For this reason, we will not discuss the "Object" and "Attribute" fields further in this chapter. However, it may be useful to know that wildcards can be used in these fields. For example, to allow Read access to all web pages, an ACL could be defined with the following permissions:

Access type:	"Read"
Allow/Deny:	"Allow"
Object:	"WebPages"
Attribute:	"*"

As may be guessed, the "*" in the attribute field means "all attributes".

NOTE: Should you find it necessary to modify these basic components or create new ones, please contact PortaOne Support. We can provide you with a list of Object and Attribute resources, or otherwise assist you in maintaining ACLs.

Components and User ACLs

Components will be made up of zero or more permissions, and can include other components (as dependencies). If access level ACLX includes access levels ACL1, ACL2 and ACL3 (or, in other words, is *derived* from ACL1, ACL2 and ACL3), then ACLX will contain all the permissions defined in ACL1, ACL2 and ACL3 (along with all of the access levels they in turn are derived from).

What happens if there is a contradiction; for example, if ACL1 denies read access to Accounts.password, and ACL2 grants it? In such a case, the first available definition will be used. Thus, in the example above, access will be denied according to ACL1, which is first in the list of included access levels. In addition to these, a component has several other aspects.

When editing a component, you will first see a screen as in the following screenshot:

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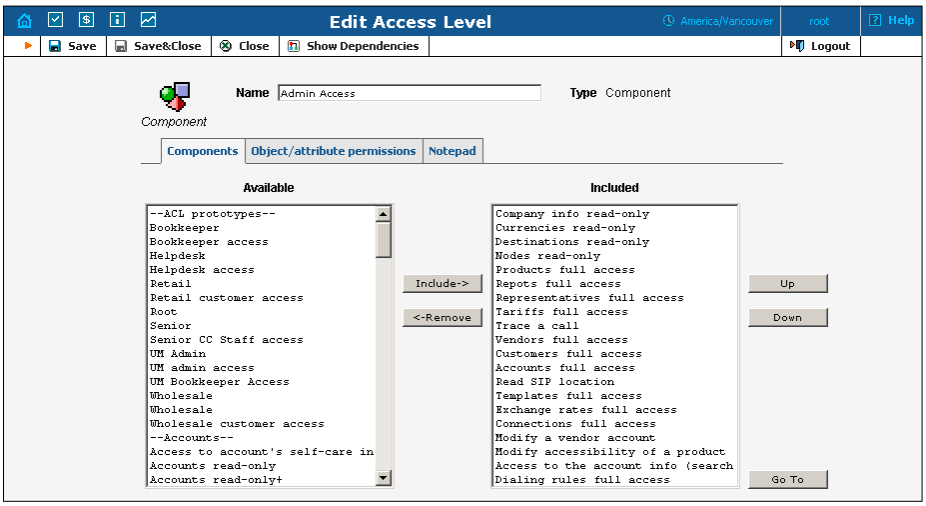

Including components as dependencies within other components gives the system its power. Here we see that the "Admin access" level is defined by over a dozen dependant components. Note that this component does not actually define a permission itself, but rather relies on the implementation of its dependants.

By deriving new components from existing components in the system, you can implement fine-grain access control and define User ACLs specific to your operational environment.

Access Level Management Interface

We have approached this discussion of the ACL system by starting with the fundamentals and building up your skills from there. Now we will discuss the entry point for ACL management. On the PortaBilling100 administrative interface you will find a link to "Access Levels". This link takes you to the Access Level Management main screen pictured below.

This screen is similar to many others in the PortaBilling100 system, including a search interface at the top and a results listing at the bottom. (By default, all ACLs are shown in a paged format on this screen.) You may search for ACLs using any combination of Name and Type.

In the results listing, you may also see the dependencies icon and delete icon. ACLs can only be deleted when they are not in use. If a component contains any included components, you will be able to click on the dependencies and see search results for all dependants. The following screenshot shows all dependants for "Accounts full access". Note that some of the dependants have their own dependencies.

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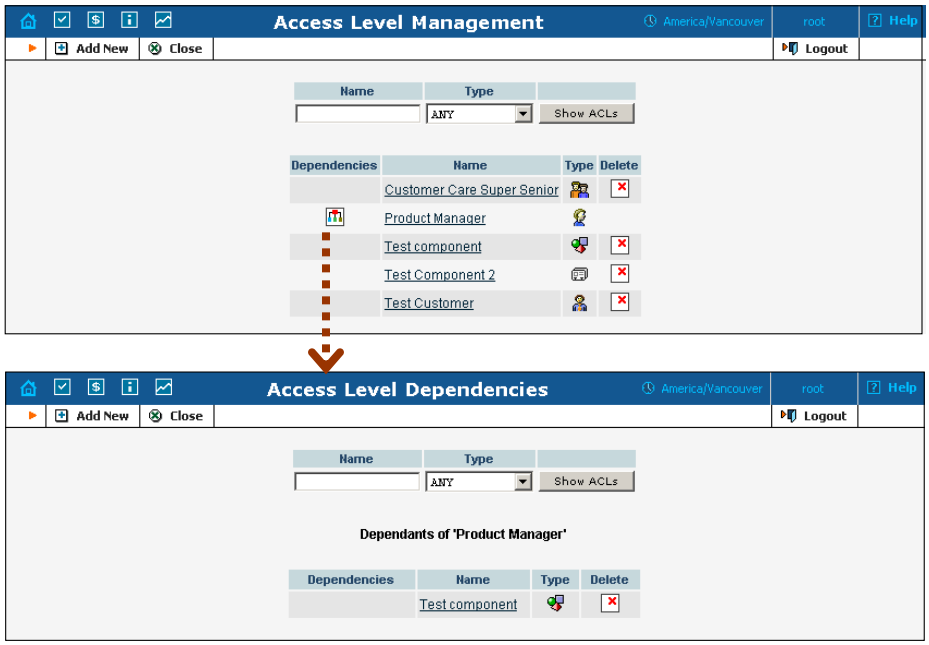

We have already discussed the necessary parameters for creating or editing components, but we have not yet discussed component inclusion in detail. Each access level may have zero or more dependant components. These components are ordered, and likewise are applied in order until the first matching permission is reached.

To understand this better we will use the previous example. Suppose a user is trying to view ASR reports. His access level must allow reading of "WebPages.ASR" (object "WebPages", attribute "ASR"). For the sake of simplicity, we will say that his access level includes "A", "B", and "C", where "B" allows this permission, but "C" explicitly denies it. In this case, the user's ability to view these reports is based on the ordering of these components. If "B" appears before "C", then it will work. Otherwise, he will not have access.

This may sound complex, but in practice the user interface is quite simple. Two columns are shown on the "Components" tab of the edit screen for each access level. On the left, you have a list of the available components; on the right are the components which are included. Between these two columns you have the "Include->" and "<-Remove" buttons, which move selected items between the two lists. As for ordering, the "Up" and "Down" buttons on the far right-hand side of the screen allow you to rearrange selected elements of the "Included" column. The "Go To" button opens the edit screen for the selected component.

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Creating a New User ACL

From time to time you will find that the predefined user ACLs (Admin, Helpdesk, and so on) offer too few or too many restrictions for a particular class of user. In such a case, it is time to create a new user ACL.

The easiest method is to take an existing access level and create a new one modeled on it and then modified to fit your needs. You should examine the permissions granted to the model access level, and verify that you want to grant access to those resources. Next, you can include other components to suit your needs. As a style recommendation, we suggest that you first create a component containing the dependant components you wish to utilize. Finally, create a new user ACL which includes only this new component. Now you can assign this ACL to new users.

The PortaBilling100 ACL management system contains style conventions which you would be well-advised to follow:

- The name of a component should be descriptive, based on the actions which it allows. Examples are "Delete a node", "Currencies read-only", and "Access to Vendor Reports".
- Create a new group for any components or user ACLs which you define so as to keep them separate from PortaBilling100's built-in ACLs.
- By convention, when defining a new user ACL (for example, "DemoUser"), we append "access" to the name of a component ("DemoUser access") to include any dependant components.

You should now have the skills necessary to implement the PortaBilling100 security model and customize it to suit your business environment.

Default User ACLs

PortaBilling is supplied with the following predefined ACLs:

Name	Description
Root	Super User, read and write access to all PortaBilling objects
Admin	Like Root user, but with some limitations: - cannot create new users - cannot modify company info - read-only access to Destinations, Currencies, Nodes
Bookkeeper	Read-only access to billing information (Tariffs, Products); can change balances for Accounts/Customers, block/unblock.; no access to

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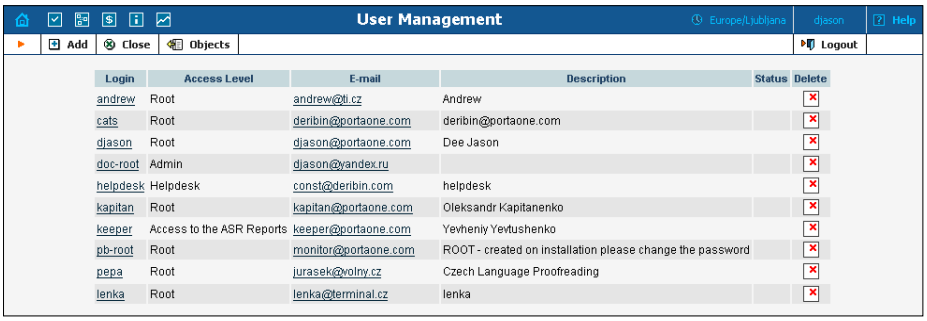
	CDRs; access to reports.
Helpdesk	Read-only access to billing information (Tariffs, Products); can modify Customer and Account parameters; access to Trace Call.

User Management

The User Management screen shows existing users registered in the system, and also allows you to edit current user information and to add and delete users. To add a new user, select the **Add** button from the pager. The user list table contains the following information and operations:



Column	Description
Login	The user name for login and user identification. The user name provides a link to the edit screen for that particular user.
Access Level	The privilege level or role assigned to the user. See the **Access Levels** section for more information.
E-mail	E-mail contact for the user. For convenience, this is provided as a link, so you can send an e-mail to the user directly from this screen.
Description	A short description associated with the user.
Delete	A delete button appears next to all users except for the Root user created on installation. This permanently deletes the user from the system.

Add/Edit User

The Add User screen allows you to enter the details to create a new user account. The Edit User screen allows you to change details for a particular user account.

Address Info

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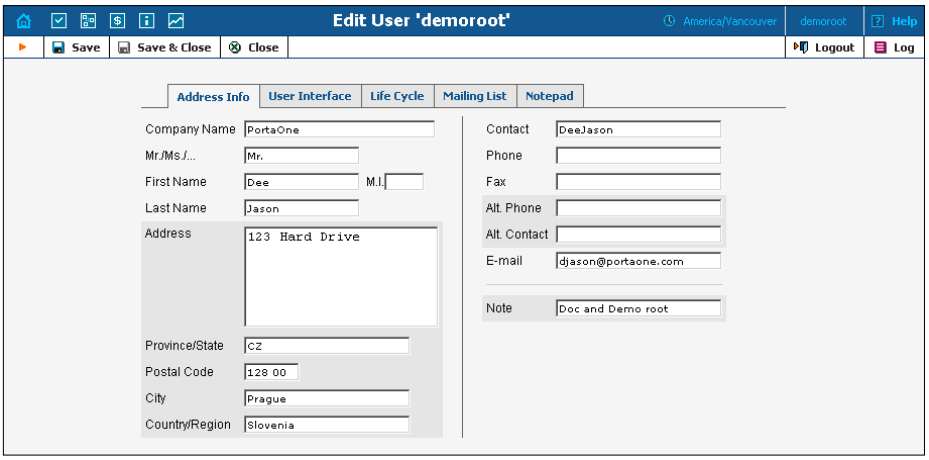
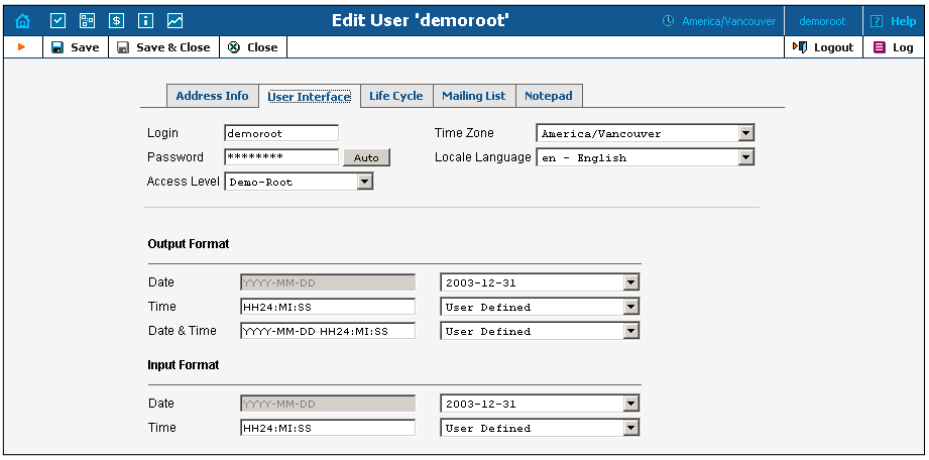


Mandatory fields for user contact information:

Field	Description
Description	A short description of the user that will be visible on the main User Management screen.
E-Mail	An e-mail contact for this user.

User Interface



Field	Description
Login	The new user ID to be used at login and elsewhere throughout the system.
Password	The password for this login. An easy to remember password may be automatically generated by pressing the "Auto" button.
Access Level	The privileges or role associated with this user. See the **Access Levels** section for more information.
Time Zone	The time zone in which this user will be operating.
Web Interface Language	The language to be used on the admin web interface for this user.

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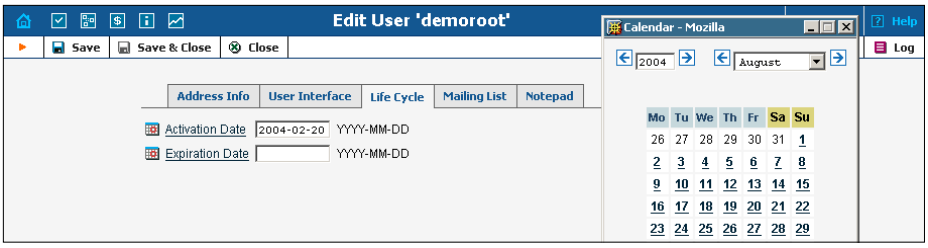
For a description of the input and output formats, please refer to the **Common Features** section.

Life Cycle

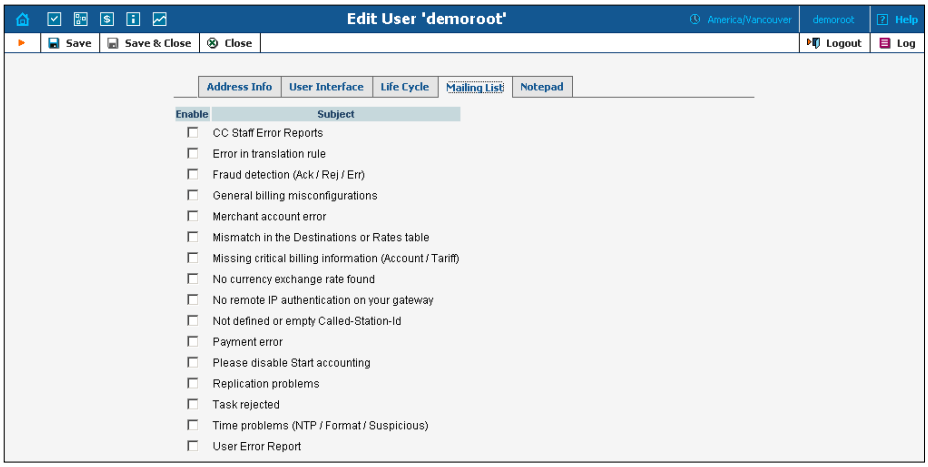
This allows the administrator to setup the user account's activation and expiration dates.



The account will not expire if the Expiration Date field is left blank.

Mailing List

PortaBilling dispatches e-mail alerts (e.g. error messages and notifications) during normal production. E-mails are dispatched to each user according to the Mailing List settings.



To add different notifications for a specific user, check/uncheck one or more boxes on the left to select multiple Subjects. The available alert types and their conditions of activation are as follows:

Alert Type	Description
CC Staff Error Reports	Customer care (your reseller's customer support) may discover a problem they are unable to solve by themselves. So they may need to escalate this problem to your support people. When they send an error

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	report from the CC web interface, it will be received by users subscribed to this mailing list.
Error in translation rule	A translation rule could not be properly applied, due to a programming error.
Fraud detection (Ack / Rej / Err)	Attempt to login more than once using the same debit account number.
General billing misconfiguration	Debit account made a call costing more than its available funds; successful on-net call was detected (on-net calls may be normal, but in most cases they signal connection misconfiguration); etc.
Merchant account error	Error received from the online payment processor while trying to execute the transaction.
Mismatch in Destinations or Rates table	The cost of a call could not be determined, because no matching rate was found in the specific tariff.
Missing critical billing information (Account/ Tariff)	A call could not be billed due to missing information (e.g. unable to identify the account which is to be charged for the call)
No remote IP authentication on your gateway	It seems that your gateway accepts all incoming VoIP calls. See the "*Remote IP authentication*" chapter in the Portabilling100 User Guide vol. I for more details.
Not defined or empty Called-Station-ID	The Called-Station-ID (DNIS) field is empty in the request, so PortaBilling is unable to determine which number was dialed. This might happen due to a firmware problem on Quintum.
Payment error	Unable to perform periodical payment (credit card is blocked or no funds are available).
Please disable start accounting	The system has received start records from the Radius client (gateway), while only stop records are necessary for the billing.
Replication problems	Database replication may be performing poorly or not at all.
Task rejected	A deferred task (such as Account generation) could not be run.
Time problems (NTP / Format / Suspicious)	This alert may be generated if we discover that the time in the accounting record is in the wrong format or seems suspicious (such as a point in the future, or one too far in the past).
User Error Report	Your customer support may discover a problem they are unable to solve by

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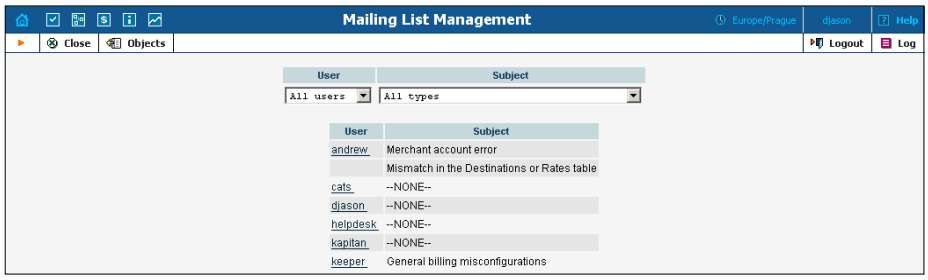
	themselves (e.g. only your network administrator can do it). So they may need to escalate this problem to your technical staff. When they send an error report from the web interface, it will be received by the admin users subscribed to this mailing list.

Mailing List

The Mailing List Management page allows you to define which e-mail alerts are to be sent to different users. (See **Mailing List Subscription**)

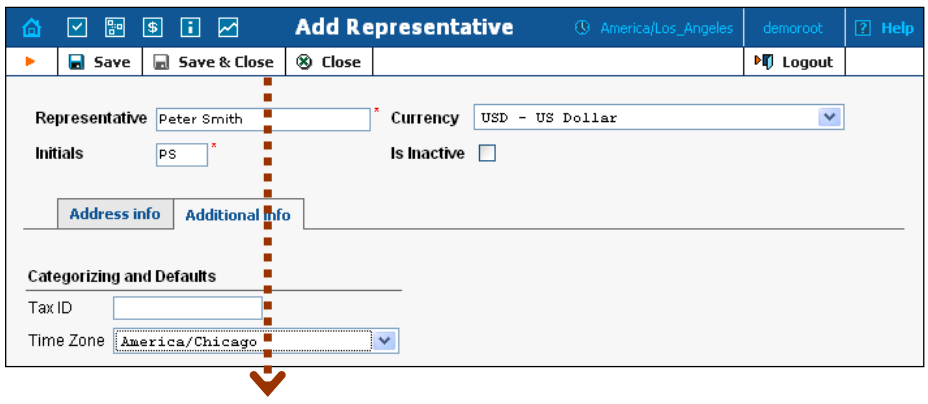


Select a user from the **User** drop-down list to view which mailing lists a particular user is subscribed to. Select a mailing list from the **Subject** drop-down list view all users subscribed to a particular mailing list.

Representatives

Your business may need to track income associated with people with whom you have a business relationship. These people may sometimes be employees, while in other cases they may be a dealer, a partner at a law firm, or an independent contractor.

Each sales representative is assigned initials. Their names and initials appear on sales forms, allowing you to associate specific sales reps with specific sales in order to track their income.



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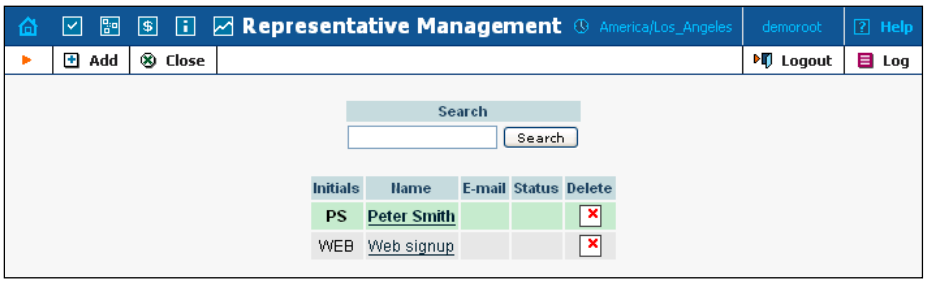


Note: Once selected in the Add Representative window, the Currency can not be changed.

Representatives do not participate in billing or revenue sharing. They are listed for information purposes, as is required when PortaBilling is integrated into back-office CRM for calculating commissions and so on.

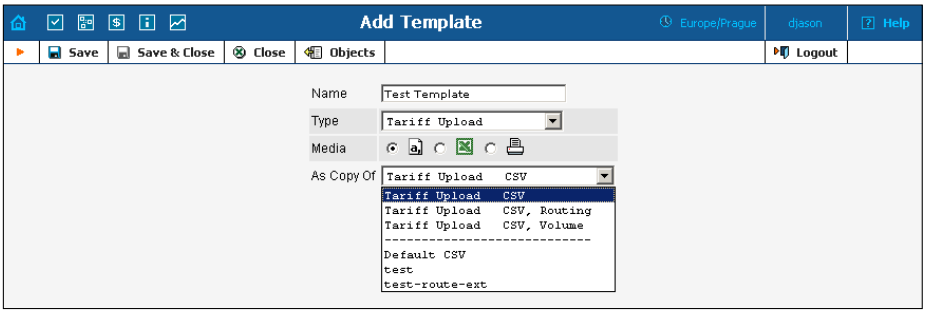
Templates

The purpose of templates is to maintain all data uploaded to and downloaded from the system. Templates automate the processing of user input and create customized output in various data and media formats.

Read more about using the Templates functionality in the PortaBilling Template Guide, available for download from: **www.portaone.com/resources/documentation/**

Add a new template

To add a new template, select the **Add** button.



Field	Description
Name	The logical name of the template object

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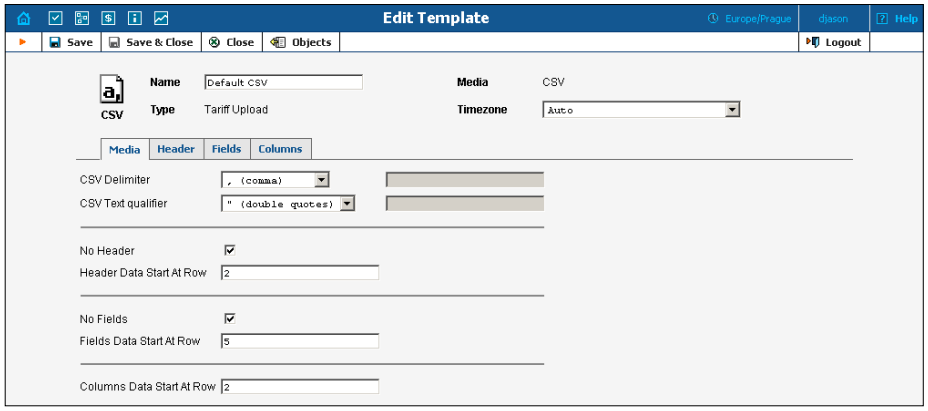
Type	One of the following: - Destinations Upload (reserved for internal use) - Destinations Download (reserved for internal use) - Invoice - Tariff Upload - Tariff Download	
Media	One of the following media types:	
		CSV – Comma Separated Values
		XLS – Excel
		Print format (HTML, PDF) – only applicable for templates of the **Invoice** type
As copy of	PortaBilling is supplied with a set of default templates for each type of document, i.e. for both information upload and download. Documents in print format, i.e. invoices, can only be "downloaded" from the system. After selecting **Type** and **Media**, the list will be populated with the default template (always on top of the list); all existing templates with the current Type and Media formats will be listed under the "-----" separator.	

To enter editing mode for this template, save your input using the **Save&Close** button. Next, select the template you would like to edit from the Templates window.

Edit Template



Once selected in the Add Template window, the document's Media and Type cannot be changed, since the information on this page is automatically generated using these parameters.

Each Template object consists of several logical components. For example, the Invoice Template's components are Media, Header, Fields, and Footer.

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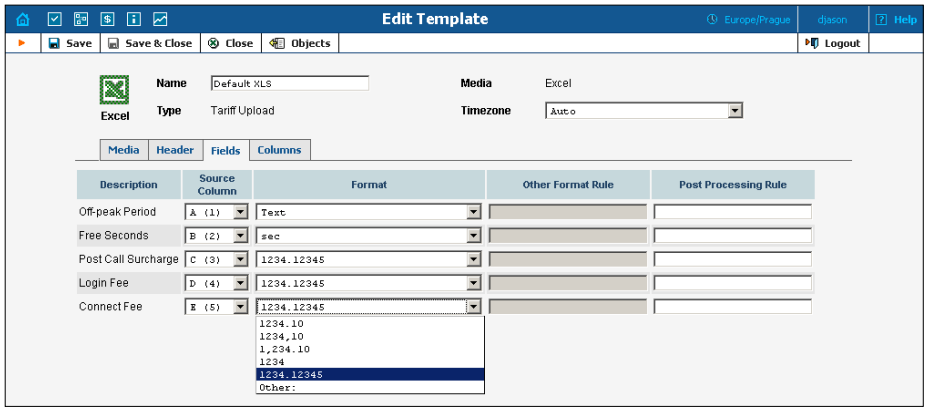
The Media tab is present for all types of templates, and shows the media available for upload or download. For Tariff upload in CSV format, it is important to know what delimiter was used, whether there is a header, or at what row the tariff information starts. For Invoices, the Media tab contains a link to the PortaBilling Layout Designer, which allows you to customize the appearance of your invoices and receipts.



The content of the Header, Fields, Columns, and Footer tabs is arranged in a similar way, and allows flexible mapping of information related to user documents and information in the PortaBilling Database.

Column	Description
Description	Description of Template Components
Source Column	Defines the mapping of template information to the original/destination document.
Format	Data format. Choose a format from the list or choose Other if the desired format is not available. Provide a format definition in the following field.
Other Format Rule	Perl code. Active only if Format = "Other:".
Post Processing Rule	Perl code.

Layout Designer

The Layout Designer allows you to customize the appearance of all types of printed output in PortaBilling.

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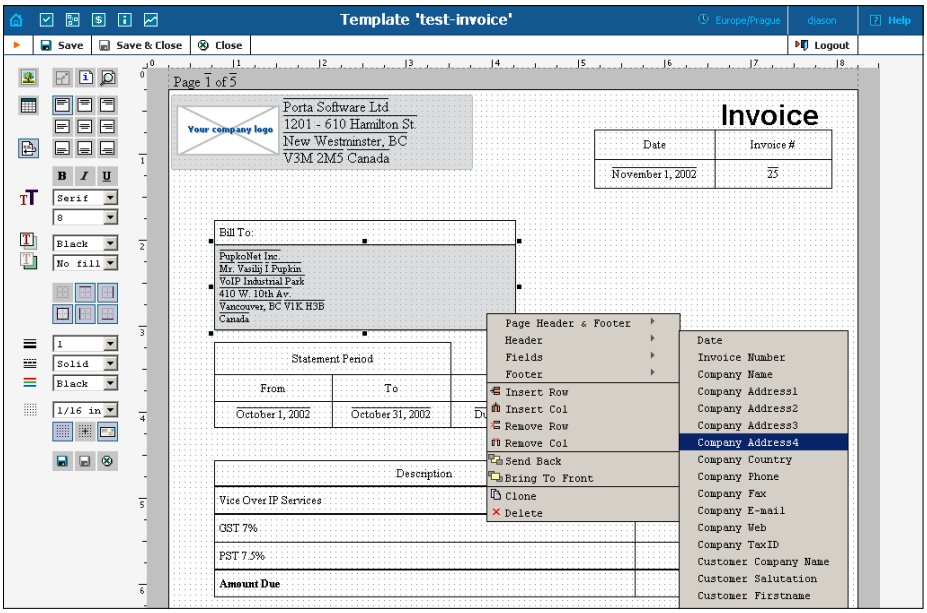

Layout Designer (LD) Quick Start

To launch, click the **Layout Designer** button on the Media tab in the Template management window. The sliding toolbar on the left side provides most of the controls for manipulating content in the editor window. There are 3 different states for most of the toolbar icons: normal, active, and not available.

Icon state	Description
	Normal - Click to activate
	Active - Click to deactivate
	Not available

Icon	Description
	Add Picture. Click to select a picture (e.g. your company logo) from a file select window. Click the **Open** button to place the picture on the worksheet. To remove the picture, right-click on it and choose **Remove.** Another way of deleting a picture is to press **Delete** on your keyboard.
	Lock Aspect. Fixes image proportions during scale operations.
	Preview. Click to preview your work in a browser window.
	Add Table. Click to put a table on the worksheet. A table can be removed by using the context (right-click) menu or by pressing **Delete** on your keyboard. Click the table cell to make it active. To add another table, click on the worksheet to de-activate the currently active object. Read more about tables below.
	Text Align. A section of 9 buttons used to align text in an active

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	table cell.
	Word Wrap.
	Text controls. Tools and selects from this section control font attributes such as font style (bold, italic, underline), font family (serif, sans-serif, cursive, fantasy, monospace), and font size.
	Foreground Color. Change the text color by selecting from this list.
	Background Color. Change the color of the active table cell by selecting from this list.
	Border. A section of 6 buttons for showing or hiding the border of the active table cell.
	Stroke. A section of 3 controls for changing the active cell's border weight, style and color.
	Grid. On by default; click to turn off the grid.
	Snap to grid. On by default; click to allow arbitrary positioning of elements on the worksheet.
	Envelope window. Two half-transparent gray boxes displaying the positions of envelope windows; click to turn off.
	Undo. Click to cancel the last action.
	Save and Close. For convenience in editing the bottom of the worksheet, these controls duplicate the main toolbar controls.

A straight line in the Layout Designer can be simulated by using a table with only one visible border.

Table

The main Layout Designer object is the table, which is a placeholder for all inserted information. A table or a table cell within a table can be moved and scaled by dragging the cell handlers. Double-click a table or a cell within a table to enter cell editing mode, where you can type in or edit a cell's text. To change the attributes of a cell's text, make sure the cell is selected (8 black square handlers are visible) and set the text attributes in the toolbar on the left.

Changing the text attributes of a cell in the Toolbar will affect all text in the current cell. To change the attributes of part of the text, enter cell editing mode (double-click), select that part of the text, and use the keyboard shortcuts listed below.

Context Menu

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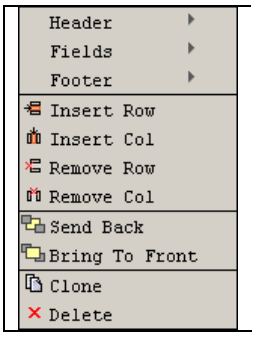
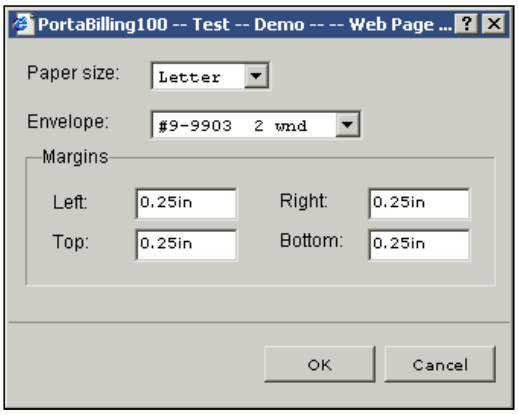


The context (right-click) menu provides you with greater control over tables and other objects, and allows certain data located in the PortaBilling database to be displayed in the table cell. Right-click on a table or cell. The three top elements of the context menu correspond to the template components (tabs); for an invoice, for example, these would be Header, Fields and Footer. Users can also set the order of all objects in the window and clone or delete selected objects.

Select one of the menu elements to activate a submenu containing a list of all the fields specified in the template editing window. The selected item will appear in the selected cell as the item's value. Double-click the cell to enter editing mode; the cell now displays the corresponding variable.

Page/Print Setup

The page context menu (right-click on the Worksheet) provides access to the Web-Page Dialog for page, envelope and print setup.



Open your browser prior to printing. In your browser's **File** menu, select **Page Setup.** In the dialog window, set up the paper size (A4 or Letter), delete all Header and Footer symbols, and set all margins to zero or a value close to zero.

Envelope Formats: America

Envelope	Envelope Measurements	Window size	Window From Left	Window From Bottom
#6-3/4	3-5/8" x 6-1/2"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#7	3-3/4" x 6-3/4"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#7-3/4	3-7/8" x 7-1/2"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#8-5/8	3-5/8" x 8-5/8"	1" X 4"	1"	3 / 4"
#9	3-7/8" x 8-7/8"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#10	4-1/8" x 9-1/2"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#11	4-1/2" x 10-3/8"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#12	4-3/4" x 11"	1-1/8" X 4-1/2"	7/8"	1 / 2"
#14	5" x 11-1/2"	1-1/8" X 4-1/2"	7/8"	1 / 2"

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Double-window envelopes

Envelope	Window Size	Location	Placement
#9-9903	TOP WINDOW		
	3 7/8" x 8 7/8"	From Left	3/8"
		From Top	1/2"
3 5/8" x 8 5/8"	BOTTOM WINDOW		
	1" x 4"	From Left	7/8"
		From Bottom	5/8"
# 8-5/8	TOP WINDOW		
	7/8" x 3-1/2"	From Left	5/8"
		From Bottom	2 1/4"
3 5/8" x 8 5/8"	BOTTOM WINDOW		
	1" x 4"	From Left	5/8"
		From Bottom	5/8"
#9-13036	TOP WINDOW		
	7/8" x 3-1/4"	From Left	3/8"
		From Bottom	2-1/2"
3 7/8 x 8 7/8"	BOTTOM WINDOW		
	1-1/8" x 4-1/2"	From Left	1/2"
		From Bottom	7/16"
#9-13037	TOP WINDOW		
	7/8" x 3-1/4"	From Left	3/8"
		From Bottom	2-1/2"
3 7/8 x 8 7/8"	BOTTOM WINDOW		
	1" x 4"	From Left	1/2"
		From Bottom	3/4"
#9-13038	TOP WINDOW		
	7/8" x 3-1/2"	From Left	3/8"
		From Bottom	2-3/8"
3 7/8 x 8 7/8"	BOTTOM WINDOW		
	1-1/8" x 4"	From Left	3/8"
		From Bottom	5/8"

Note: Envelope #9-9903 (3 7/8" x 8 7/8") is QuickBooks compatible.

Envelope Formats: Europe

Format	Size [mm]	Content Format
C6	114 × 162	A4 folded twice = A6
DL	110 × 220	A4 folded twice = 1/3 A4
C6/C5	114 × 229	A4 folded twice = 1/3 A4
C5	162 × 229	A4 folded once = A5
C4	229 × 324	A4

DIN 680 specifies that a transparent address window should be 90 × 45 mm in size, and the window's left edge should be located 20 mm from the left edge of the envelope. For C6, DL, and C6/C5 envelopes, the bottom edge of the window should be 15 mm from the bottom edge of the

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envelope. For C4 envelopes, the top edge of the window should be either 27 or 45 mm from the top edge of the envelope.

Keyboard Shortcuts

Shortcut	Action
Arrow keys	Move objects with grid size increments
Ctrl - arrow key	Use to scale table cells or images with current grid size increments
cell editing mode	
Ctrl-A	Selects all objects in the Template window if nothing is selected, or selects all text in an active table cell
Ctrl-C	Copy selected text
Ctrl-V	Paste clipboard text starting from the current cursor position
Ctrl-X	Cut highlighted text
Ctrl-I	Change selected text style to *Italic*
Ctrl-B	Change selected text style to **Bold**
Ctrl-U	Change selected text style to Underline
Ctrl-K	Hyperlink selected text (opens hyperlink editing dialog)

Netscape or Mozilla users may experience the lack of a movable cursor allowing them to select text from the keyboard in cell editing mode. Press the **F7** button to turn the edit cursor (caret browsing) on and off.

Users with small screen resolution may enjoy the benefits of their browser's full-screen mode. Simply press the **F11** button to switch your Mozilla, Netscape or IE into full-screen mode.

Destinations

Destinations are a list of all possible phone number prefixes to be used in your system, which will later be employed to create price lists (Tariffs). For convenience, destinations are grouped in alphabetical order by country.

Destinations may be edited and, if a destination is not being used in any tariff, it will also have a 'delete' button. It is, of course, not necessary to include every destination in a given price list.

PortaBilling can support different numbering plans, but it is highly recommended to keep all of your destinations in the E.164 numbering space. The Destinations table contains the valid E.164 prefixes. Different standardization and governmental bodies control the E.164 numbering space, and some private numbering spaces also exist.

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Click here to view the Official ITU Dialing Procedures document (PDF)

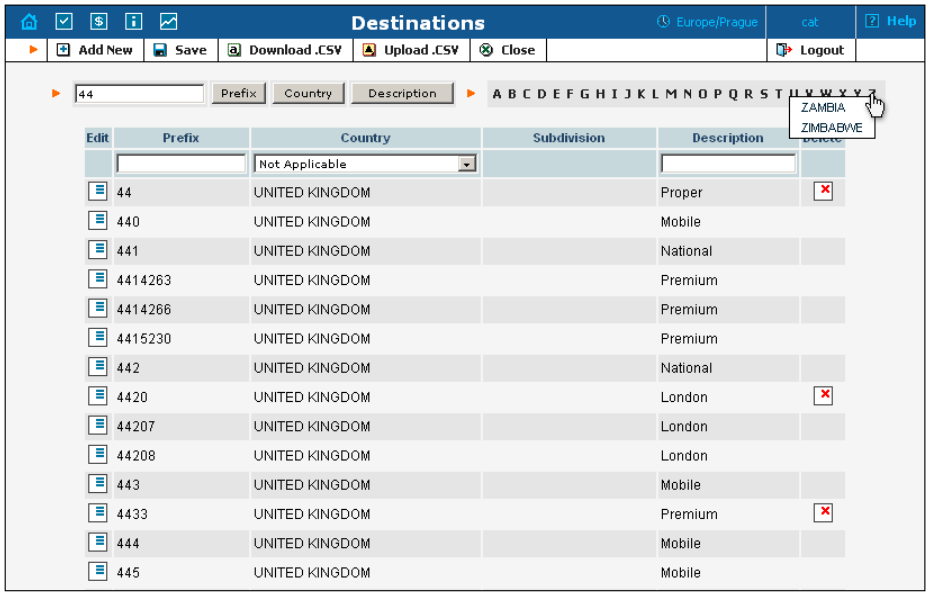
PortaBilling is supplied with an essential Destinations database containing reliable information collected from authoritative sources, and linking prefix information to:

- Country (if applicable)
- Subdivision (if applicable)
- Description

Of course, you can edit the supplied Destinations list according to your needs. Also, you can always add more destinations later if needed.

Add/Edit destinations online

To add new destinations, select the **Add** button. The **Save New** icon will appear on the Destinations form. Enter the prefix and choose a country from the drop-down list. After selecting the country, the subdivision field will be refreshed. Choose a subdivision if necessary. Click the Save New icon to save the new destination.



To edit an existing destination, enter a prefix, country or description (i.e. proper, mobile, etc.) in the search field and click the corresponding button. You can also select a country alphabetically from the top right part of the interface. Choose the destination you want to edit from the list by clicking the **Edit** icon. The content of the row will be copied into the Destinations form above, and the **Save Edit** icon will appear in the first column. Choose Subdivision from the refreshed drop-down list and type in the Description, if any. Save your work by clicking the Save Edit icon.

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Destination access levels

User Type	Access Description
Root	Full access
Admin	Can perform all types of operations with destinations *except* for manually specifying a country during upload. If Admin uploads a new destination, the system chooses the appropriate country automatically, using the longest match from the available destinations.
all other types	Read-only

Destinations upload / download procedures

Upload

The CSV file header contains the following fields: Action, Prefix, iso_3166_1_a2, Description.

Field	Description
Action	add or delete; encoded as '+' and '–' or 'add' or 'remove' **Note:** Only unused destinations that do not appear in the Rates table can be deleted. If the action is '+' and the Prefix is already in Destinations, then the update action will be performed.
Prefix	Value to be stored in Destinations.destination.
Country two-letter ISO code	Value to be stored in Destinations.iso_3166_1_a2. **Note:** *Ignored* if the uploader has Admin access level; in this case, the system chooses the appropriate country automatically, using the longest match from the available destinations. If the Country property is not applicable, then the value must be encoded as N/A. If the field is empty and the uploader's access level is Root, then the system chooses the appropriate country automatically, using the longest match from the available destinations.
Description	Value to be stored in Destinations.description.

Download

The CSV file header contains the following fields: Action, Prefix, Country code (iso_3166_1_a2), Description.

Field	Description
Action	add or delete encoded as '+'
Prefix	Missing prefix
All other fields	Empty

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NOTE: For tariff uploads, new destinations will be e-mailed as a CVS attachment to an error report using "Destinations upload" format: Action, Prefix, Country code (iso_3166_1_a2), Description.

Uploading destinations

The system is supplied with a predefined set of countries and the most common destinations for those countries. If required, new countries are inserted into the database manually. When uploading new destinations, a superuser can specify the country using its ISO country code. If empty, the system tries to find a country via existing destinations.

For example, if "16045" is uploaded, the system finds that "1604" is already in the database as "Canada". If it is not possible to find the country in this way, or if country is "N/A", the destination will not be imported. An uploaded file with such destinations will be sent back for correction in a format suitable for upload.

ISO 3166-1 Country codes.

For more information on this standard, visit the **ISO 3166 Maintenance Agency website**.

The complete title of ISO 3166-1 is "Codes for the representation of names of countries and their subdivisions".

Country codes

- ISO 3166-1 gives coded representations of more than 230 names of countries or areas dependent on a country.
- ISO 3166-1 contains a two-letter code (Alpha-2-code), a three-letter code (Alpha-3-code) and a three-digit numeric code, (Numeric-3-code) for every entry in its list of country names.

ISO 3166-1 does *not* code:

- Names of languages (e.g. Gaelic)
- Names of nations or peoples (e.g. Dutch)
- Names of groups of countries (e.g. Scandinavia)
- Names of continents (e.g. Asia)
- Names of organizations (e.g. OAS, NAFTA, WHO)
- Top-level Internet domains

Applications

The ISO 3166-1 codes are used in many applications in all branches of industry, trade and statistics worldwide. Here are some examples of their use: the "code elements from ISO 4217" codes for currencies and funds

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are based on the ISO 3166-1 Alpha-2-Code (e.g. USD for US Dollars, where US comes from ISO 3166-1).

ISO 3166-2 Country Subdivision Codes

The ISO 3166-2 "Country Subdivision Code" establishes a code for the names of principal administrative subdivisions within countries coded in ISO 3166-1. ISO 3166-2 was published on December 15, 1998.
The code elements used consist of the Alpha-2 code element from ISO 3166-1 followed by a separator and a further string of up to three alphanumeric characters.

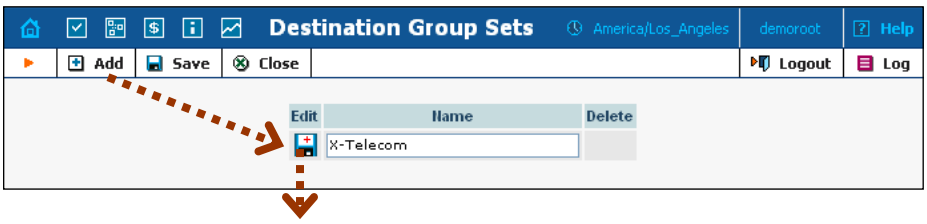
The names of the subdivisions are given in more than one language if the country has more than one official language (and if the alternative language versions were available to ISO). In Uzbekistan, for example, there are two official languages, Uzbek (uz) and Russian (ru), so the subdivision names are also listed in these two languages. The Romanization systems used to convert the country subdivision list from non-Roman to Roman script (e.g. from Cyrillic in the case of Uzbekistan) are also given. The abbreviations and language codes (ISO 639) used in the header preceding the subdivision list for each country are explained in annexes to the standard.

Destination Group Sets

Very often a logical destination (e.g. Czech Republic – Mobile) will consist of multiple prefixes (420601, 420602, 420604, 420732 and others). It could be quite inconvenient to repeat the same 'create a new rate' operation for every individual prefix, since all of the price parameters are the same. Thus you can create a destination group "CZ-Mobile" and then perform "create a new rate" only once, and the rates for all of the prefixes will be created automatically. However, since different carriers might include different prefixes in the "Czech Republic – Mobile" category, we need to be able to maintain different sets of destination groups.

Creating a new destination group set

To add a new destination group set, select the **Add** button. The **Save New** icon will appear next to the Name.



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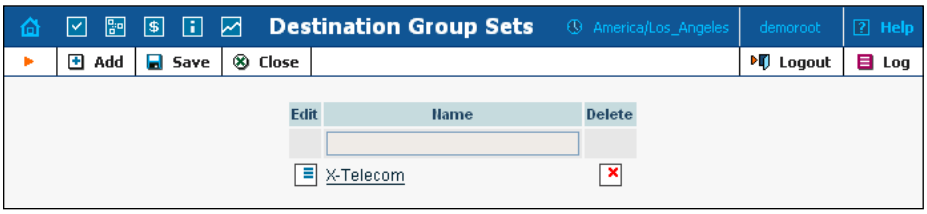
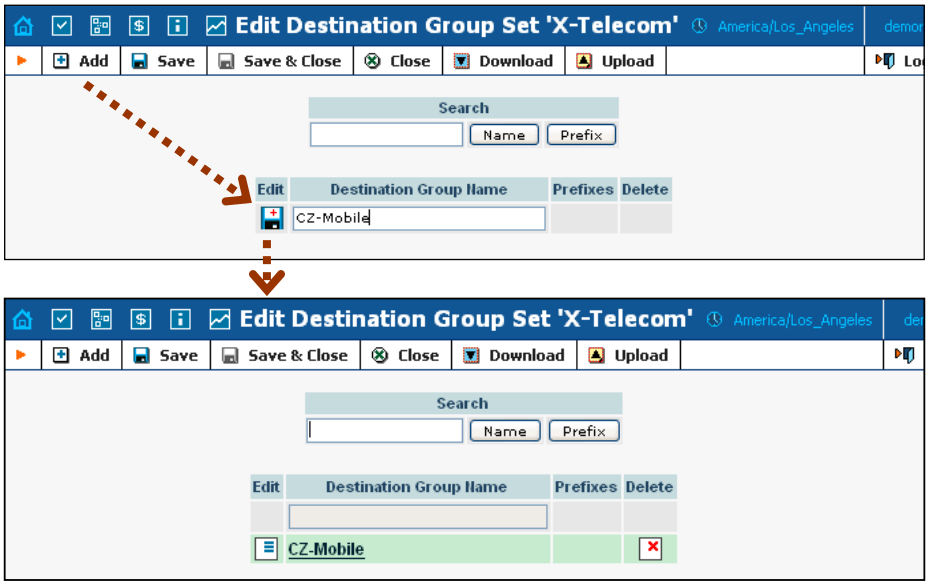


After the destination group set has been saved, click on the hyperlinked name to manage the destination groups included in this set.

Creating a destination group



Column	Description
Destination Group Name	Convenient short name for the destination group, e.g. **UK-Mobile**. It will be used to enter new rates for this group of destinations.
Prefixes	List of prefixes included in this group. For a destination group with many prefixes, only the first few will be displayed. Click on **Destination Group Name** to see a complete list of destinations belonging to this group.

Managing destinations (prefixes) within a group

Click on the hyperlinked destination group name to edit its contents. Click on **Add** to add more prefixes to the destination group

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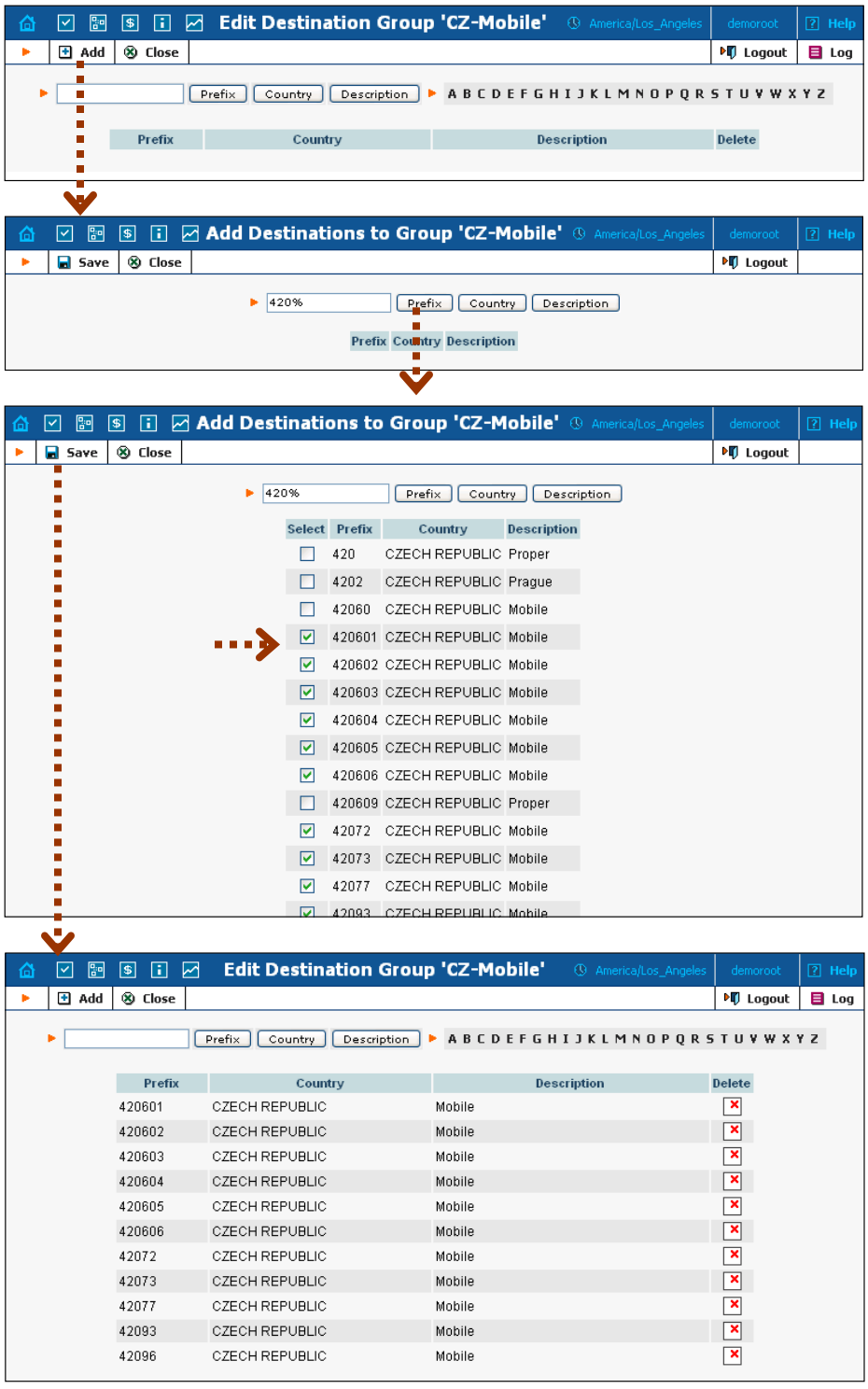

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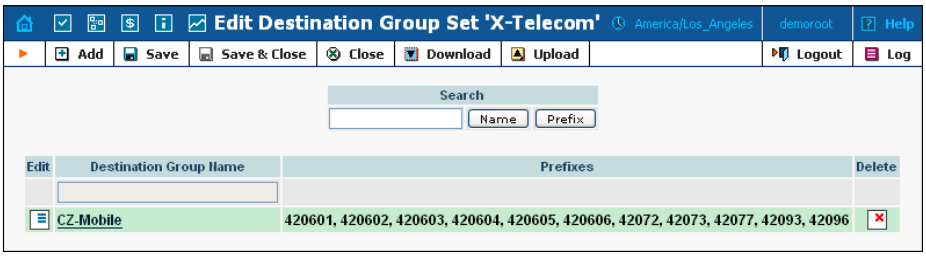

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3. Networking

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Nodes

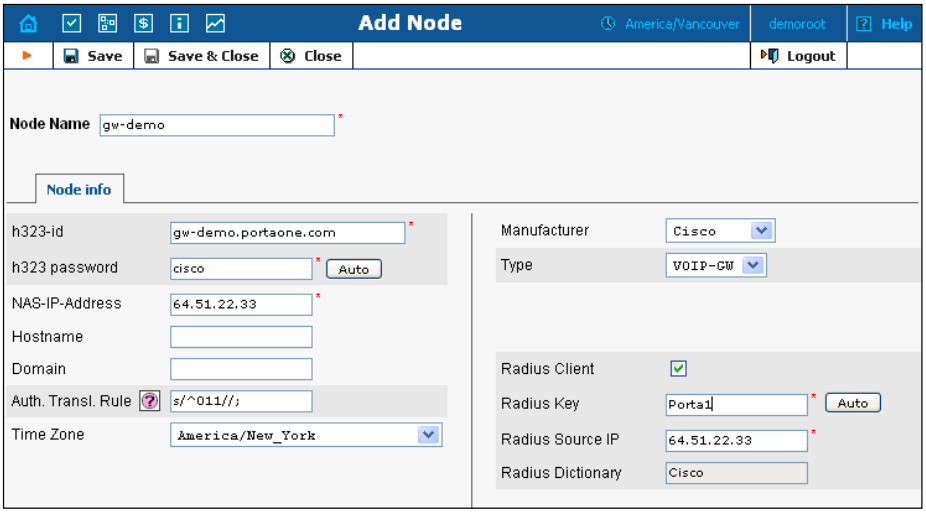
The Node Management screen enables registration, removal and maintenance of the gateway list. Nodes are those gateways which will provide accounting records to PortaBilling or exchange authentication/authorization requests with it. On this screen, the user is provided with a list of all nodes currently registered.

The search form at the top of the screen allows filtration by any combination of H.323 ID, IP address and/or whether or not the node is a Radius client. Providing any of these pieces of information and selecting **Show Nodes** will refresh the Node listing according to the new filtration criteria.

To add a new node to the system, select **Add** from the Panel. The following information is provided within the listing:

Column	Description
Name	Logical name of the node. This is also a link to the edit screen for the given node.
h323-id	Registered H.323 ID of the node.
IP	IP address of the node.
Radius Client	If the node is a Radius client, then the Radius client icon ( ) will appear here.
Delete	The delete icon ( ) allows removal of the current node. This is only present if there are no connections specified using this node.

Add/Edit Node



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In order to register a new node or edit an existing one in PortaBilling, the following information must be provided:

Field	Description
Node Name	The logical name of the node for use within PortaBilling
Node ID	Node identifier used by the terminating node within your network of trusted nodes to identify the originating gateway which is attempting to send a call. Please enter the ID which is used for this node. The default behavior is to authenticate a node by its IP address; however, this can be changed if you use your own custom application to handle incoming VoIP calls. **NOTE:** This field is only available if "Node ID" is turned on in advanced features. If you are not sure what value to choose, enter **the same value as in the NAS-IP-Address**.
h323-id	The H.323 ID which the gateway is configured to use. A correct H.323 ID is important if you use node authentication (normally via GK) and proxy/GK billing. Even if you do not use GK/proxy billing, make sure the value you put here matches the value returned from this node in the `h323-gw-id` attribute, as this significantly simplifies troubleshooting.
h323 password	The password which will be used for remote IP authentication of calls originated on this node. If you are using the Cisco default app_remote_ip_authenticate, put **cisco** here.
NAS-IP-Address	The IP address of the node.
Hostname	The internet hostname (without the domain).
Domain	The internet domain the node is operating in.
Auth. Transl. Rule	Authentication translation rule, used to transform the dialed phone number into the E.164 format used in PortaBilling.
Manufacturer	Choose "Cisco", "Quintum", "PortaOne" or another from the drop-down list, depending on the manufacturer of the equipment.
Type	Select what role the node plays in the network from the drop-down list. The options are as follows (according to Cisco naming conventions): • `VOIP-GW`: the node functions as a gateway • `H323-GW`: the node is an H.323 proxy • `H323-GK`: the node is an H.323 gatekeeper • `TERM`: the equipment is a terminal, such as an IP phone or PC phone

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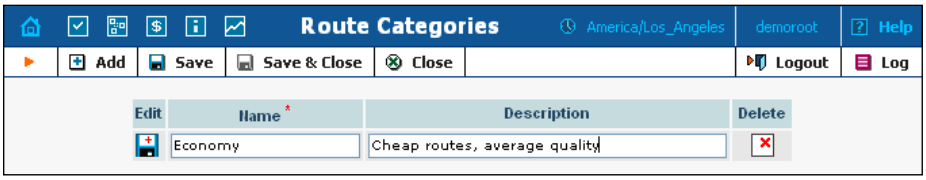
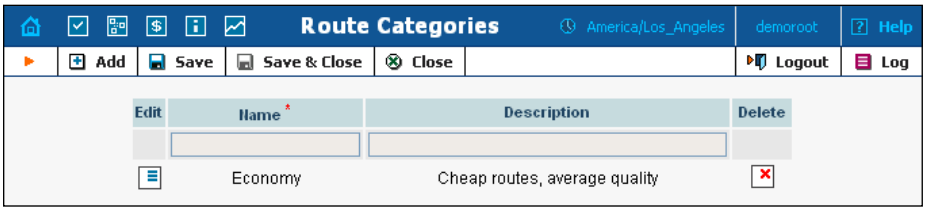
	• MCU: the node is a Multipoint Control Unit • SIP Server: PortaSIP server • MVTS: Mera Networks VoIP Softswitch **Note**, that only types applicable for the chosen manufacturer will be shown
Radius Client	Check the box if the node will be providing accounting records to the Radius server.
Radius Key	This input will be available only if the node has been designated as a Radius client. This is the authentication key for all Radius interactions. An easy-to-remember password may be automatically generated by selecting the **Auto** button.
Radius Source IP	More than one interface can be present on the node, specifying the IP address of the one that communicates with the Radius server
Time Zone	Select the time zone which is used by this node to report date/time information to the billing from the drop-down list of zones. This is only required for troubleshooting purposes, since the time zone name is included in the date/time string sent by the gateway.

Route Categories

This screen allows you to define new categories into which you can divide your available routes. To create a new category, select **Add** from the toolbar.





Column	Description
Name	Name of route category. This is the name you will see in the select menu when assigning a route category for the rate.
Description	Description of this route category.

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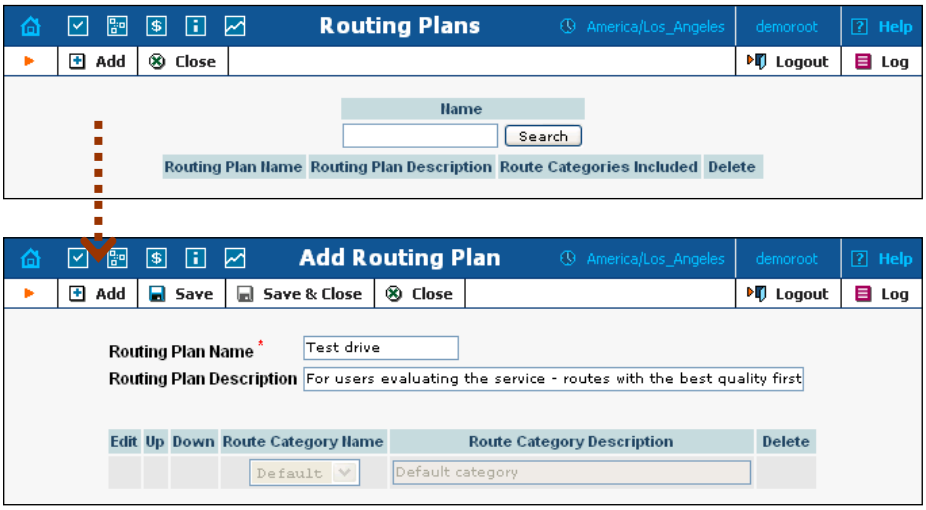
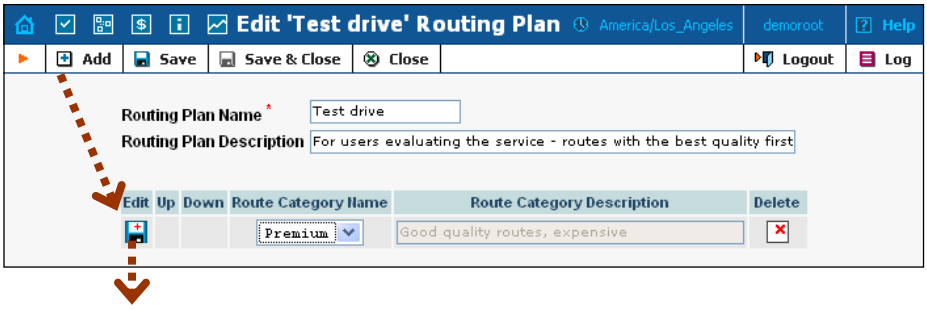
If you do not define any custom route categories, a **Default** route category is always available.

Routing Plans

A routing plan is a combination of route categories in a specific order. It defines which categories of vendors will be available for termination and in what sequence.



After the routing plan has been created, you can specify which route categories are to be included there. To add a new route category, select **Add** from the toolbar, then click the **Save New** icon to save this row.



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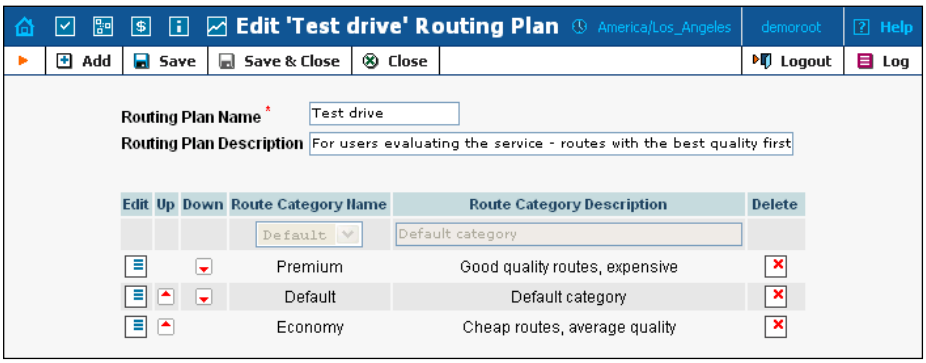
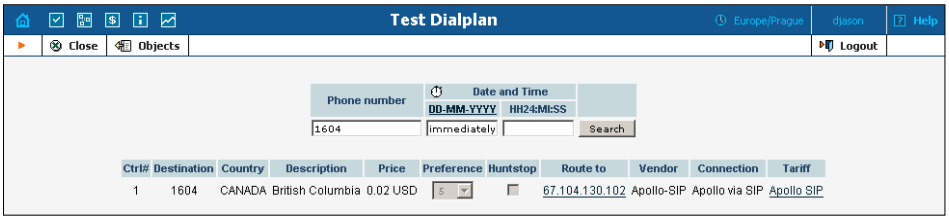


You can change the route category order using the and icons. Remember, if a route category is not included in a routing plan then a customer with this routing plan will not have access to any such routes. Click the **Save** icon to make your changes take effect.

Test Dialplan

This screen allows users to test a dialplan for a specific telephone number or certain destinations at any moment in time.



To test a dialplan, type a number in the Phone number field. The search can be performed in real time: select the stopwatch icon or click the date input format link to set a date using the pop-up calendar.

Column	Description
Ctrl#	
Destination	Matching destination from the corresponding tariff.
Country	Country where the tested destination is located.
Description	Destination description.
Price	Next interval price for the given destination (per minute).
Preference	Routing preference for this destination. See the Call Routing section of the PortaBilling User Guide for more info.
Huntstop	If checked, all routes with a lower preference than the first route with a huntstop will be ignored.
Route to	The node where the call will be routed. Click the link to open the connection screen.

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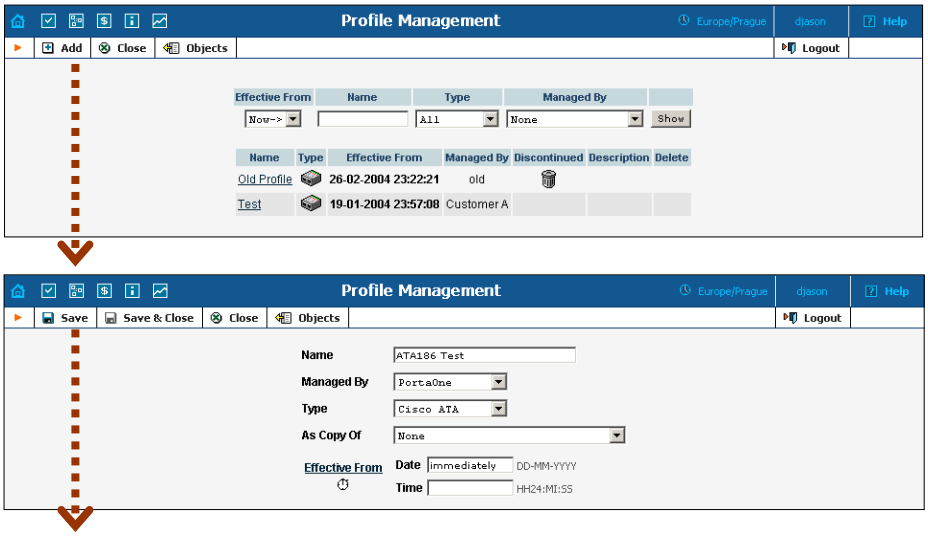
Vendor	Call terminating vendor.
Connection	Description of the vendor connection.
Tariff	The tariff used to bill this call. Click the link to open the tariff screen.

UA Profiles

UA Profiles, together with the UA Expert utility, allow service providers to reconfigure a large number of end-user devices before sending them to customers, as well as those already on a customer's premises. Instead of entering the same values for codec, server address and so on into each of a thousand user agents, you can simply create a profile which will describe all of these parameters. After that, PortaBilling can automatically create a configuration file for each user agent using account-specific parameters such as ID or password, which it will then fetch (for instance, from the TFTP server) and update.

If you later decide to change the address of the SIP server, you need only update it once in the profile in order for new configuration files to be built for each user agent. The user agents will then fetch them next time they go online. The config file is specific to each user agent, since it contains information such as username and password, and so the user agent must fetch his own designated config file.



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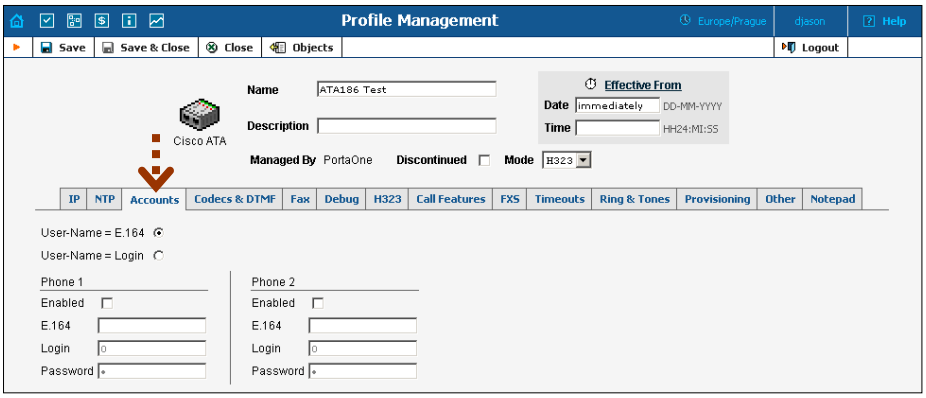

Profile list mode:

Column	Description
Name	Logical name of the profile.
Type	Telephone adaptor or SIP phone.
Effective From	Date and time when the profile becomes effective.
Managed By	None = available globally. Select a PortaBilling customer to assign the profile.
Discontinued	Indicates that the current profile is no longer in use.
Description	Short text description of the profile.
Delete	The delete icon is only visible when the current profile's effective date has not started yet.

Add Profile mode:

Column	Description
As copy of	Similar to templates; a user can create new profiles using previously created ones, so there is no need to re-enter a large amount of information.
Effective From	Set the time when the profile is to become effective. Click the stopwatch icon for the profile to become effective immediately.

In edit mode, the Profile Management screen will differ depending on the UA.

UA Expert

This utility allows you to browse configuration parameters for supported UA devices in a user-friendly format. For example, instead of entering the values 0, 1, 2, 3 and so forth for codec selection, you can pick names such as "G.729" from the select menu. This is convenient for single-time configuration of a device, or for troubleshooting.

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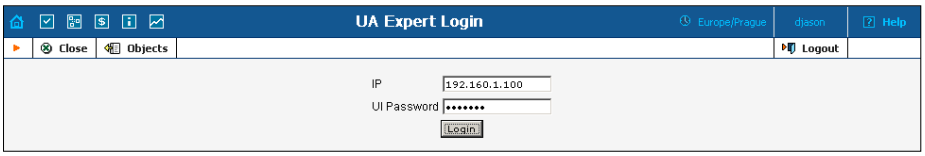

To edit configuration parameters, enter a UA IP address and password. The resulting screen will be similar to the UA Profile Management screen in the previous section.

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4. Adjusting Billing Parameters

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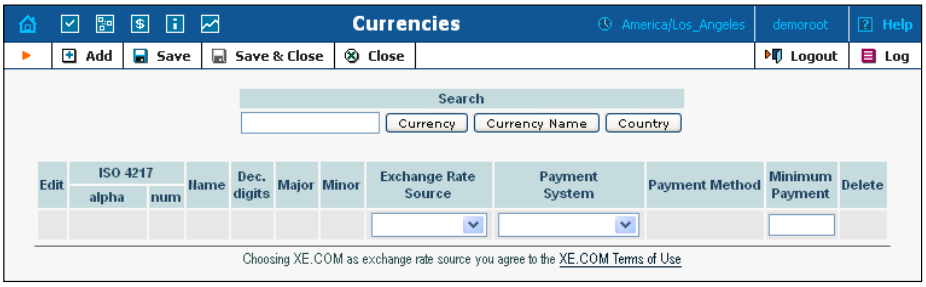
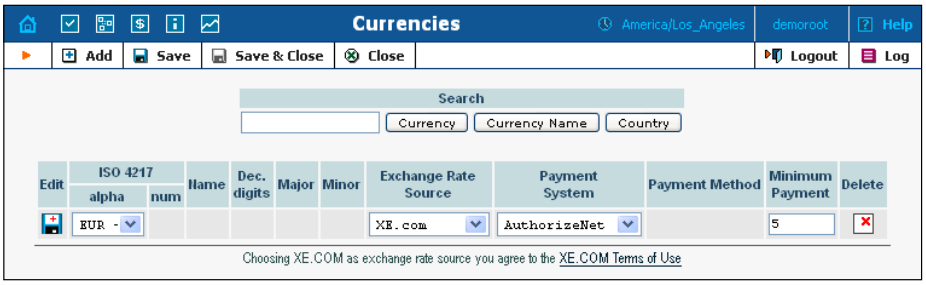
Currencies

The Currencies page allows you to define a method for determining exchange rates between currencies. Supported methods include explicitly defined exchange rates or use of external services such as yahoo.com or xe.com.

NOTE: Before relying on an external exchange rate service, read its terms of use thoroughly, as the rates it provides are usually given at a delay of at least fifteen minutes from the actual values.

To define an exchange rate source for a currency, first click **Add** in the toolbar.





From the Exchange Rate Source drop-down list, choose "Manual", "yahoo.com", or "xe.com". (The specific exchange rate is defined on the Exchange Rates page, available from the PortaBilling home page.)

The next drop-down list shows all payment systems registered by the system's administrator. Choose one which will be responsible for all payments in this currency using the account. If this is not needed, select an empty value. Because of charges for the use of payment systems, it is recommended that a non-zero value be entered in the Maximum Allowed Payment field.

Select **Save** or click the **Save** icon in the Edit field to make your changes take effect.

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The ISO 4217 currency code is normally composed of a country's two-character ISO 3166 country code plus an extra character denoting the currency unit. For example, the code for Canadian Dollars is simply Canada's two-character ISO 3166 code ("CA") plus a one-character currency designator ("D"). Currency unit names (major and minor) are not defined in ISO 4217, and are listed in the table only for user convenience. Visit **BSI Currency Code Service (ISO 4217 Maintenance Agency) website http://www.bsi-global.com/** for more information.

Exchange Rates

All exchange rates used within the system are listed. The **Effective** drop-down list allows you to define whether only current exchange rates ("Now") or all exchange rates ever used ("->Now") will be shown. The following information is provided in the exchange rate listing:

Field	Description
Edit	Click the **Edit** ( ) icon to modify the given exchange rate. Select **Save** or click the **Save** icon in the Edit field to make your changes take effect.
ISO 4217	The currency code identifier (for example, "CAD" for Canadian Dollars).
Name	The currency unit name (for example, "Canadian Dollar").
Base Currency	The currency to be exchanged into.
Base Units	Defines the number of units of the base currency equal to one unit of the foreign currency. (For example, with British Pounds as the foreign currency and a base currency of U.S. Dollars, the base currency units might be "1.5326".)
Source	Shows the exchange rate source selected on the **Currencies** page for the given currency.

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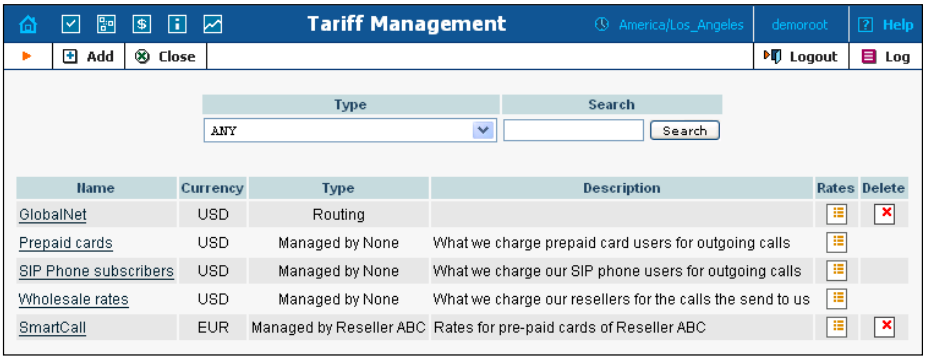
Timestamp	The effective date for the given currency. Newer exchange rates supersede older ones.

To add a new exchange rate, click the **Add** button; this will start a new row in the table header. Select the currency from the list, and enter the exchange rate. Click the **Edit** icon to modify an existing exchange rate. This will copy the content of the current row into the table header. The source will be changed to Manual. Enter the new exchange rate, then select either **Save Edit**, **Save** or **Save&Close** to save changes.

Tariffs

A tariff is a collection of individual rates, a rate being a per-destination price. Each tariff has its own set of rates. Call billing is based on billing units. You can define two billing units for each destination: the first billing unit (interval) and the next billing unit (interval). Billing unit precision is one second, and the minimum length of each unit is likewise one second. Typical billing unit configurations include 60/6 (the first unit, i.e. the minimum charged call duration, is one minute, and subsequent intervals are one-tenth of a minute, i.e. six seconds) and 1/1 (per-second billing).



The main Tariff Management screen shows a list of all existing tariffs. Tariffs can be located using the Search form, by selecting a reseller from the drop-down list or choosing the tariff's name. To edit a tariff, click on its name in the list. Click the Edit Rate icon to edit individual rates for the given tariff. The Delete icon will be visible only when the tariff is not in use (not assigned to any customer or vendor and not being used in any product's accessibility), allowing permanent deletion of the given tariff.

Add/Edit tariff

To add a new tariff to the system, select **Add** to go to the Add Tariff screen. Existing tariffs can be edited by clicking on the tariff's name in the list.

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Field	Description
Name	The logical name for the tariff object.
Type	By default – **Managed by None**. The tariff can be assigned to a reseller (**Managed by NNN**), so that it is manageable from the Customer Self-Provisioning web interface. **Routing** means this tariff includes special extensions for routing information, while **Volume** indicates a volume-based tariff.
Currency	Indicates the currency in which pricing information is defined. All pricing information for a single tariff must be defined in the same currency.
Off-Peak Period	Off-peak period definition; click the wizard icon to launch the period format definition wizard.
Off-Peak Description	Human-readable description of the off-peak period (e.g. "From 21:00 until 09:00, Working Days"). This field is automatically filled in by the wizard.
Destination Group Set	A set of groups you would like to use for more convenient rate entry.
Free seconds	Number of free seconds granted for each call. In order to claim free seconds, the length of the call must be at least one billing unit (first interval; see the 'Enter Rates' section above).
Post Call Surcharge	Increases the total call cost by the given value.
Login Fee	Amount to be charged immediately after the first user authorization.
Connect Fee	Amount to be charged for each successful call, in addition to other charges.
Round Charged Amount	Pattern that defines the rounding of a charged amount in an individual CDR. This pattern takes the form XXX000. An X on the left means that the digit(s) in this position should be left unchanged, while a zero on the right means that this position will be rounded. For example, XXXXX.XX000 means that amounts will be rounded up to two decimal places, so that 1.2345 becomes 1.24; note that rounding is **always** upwards.
Formula	Default call rating formula to be applied to new rates. Note that the value of this parameter is only used when a new rate is inserted. Modification of this parameter has no effect on existing rates.
Short Description	While the name of a tariff is for your internal use, and normally is created according to your internal rules, you can also add a name meaningful to your reseller. For example, for the tariff name **aABC-SmartCall-USD-1800**, the short description will be **Smart call using a toll-free number**.

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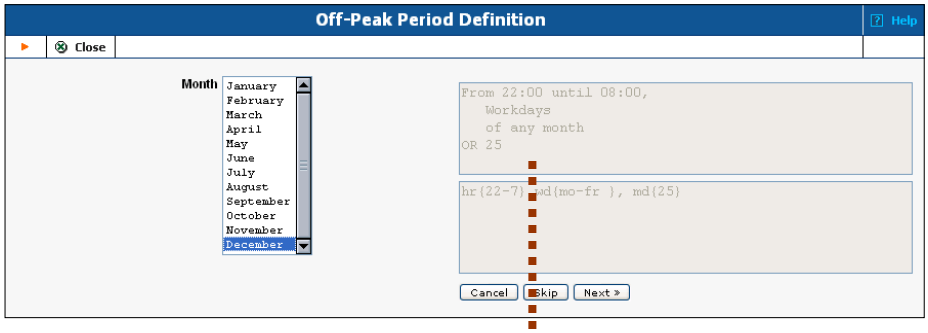
Description	Tariff description.



Off-Peak Period Definition Wizard

The Off-Peak Period wizard provides users with a flexible tool for defining the off-peak period of any tariff. Via a sequence of screens the user may select a time interval, day of the week, day of the month, and month; multiple select is allowed. The following example illustrates the process of creating an off-peak period that starts at 6pm every day and lasts until 6am the next morning. Another off-peak interval is on weekends. We will also include some holidays, i.e. January 1st and December 24-26.

In the first screen, select 6pm in the **From** column, and 6am in the **Until** column. Now click the **Next** button. The two text areas on the right of the screen give the user a display of the current period definition. The top text area displays a verbal definition of the period -- `From 6:00pm until 6:00am`, and the bottom one contains this same information in a format that can be parsed by PortaBilling -- `hr{6pm-5am}`. This sets up the first period; in order to continue, skip the following screens by pressing the **Skip** or **Next** button until the "Period definition completed" message is displayed, then press the **Add** button to add another definition to this period. The wizard now returns to the first screen.

NOTE: Time::Period treats all formula elements "inclusive". So in the example above 6pm to 6am will be represented as hr{6pm-5am} – this is absolutely correct, since 5am actually means "all of the 5th hour – 05:00:00 ... 05:59:59"

Now for the weekends: pressing the **Skip** or **Next** button, go to the second screen and select *Weekend*, or, holding down the <Ctrl> key, select *Saturday* and *Sunday* from the list. Select the **Next** button and skip until the "Period definition completed" message is displayed. Press the **Add** button to add another definition to this period.

To include January 1st in the off-peak period definition, skip to the Day of Month screen, and select *1*. Click the **Next** button. Now select *January*, click **Next**, skipping forward to the next screen. Follow the same steps to

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select the December 24-26 interval. Hold the <Ctrl> key down to select multiple entries.

On the next screen you can choose how the system will charge calls which border on your off-peak period, i.e. they cover both peak and off-peak time. There are two options you can choose:

- If the call starts in the off-peak period, it will be charged using off-peak rates (even if part of the call was made during peak time). This method is the easiest and most transparent for end user authorization of outgoing calls.
- Or, the off-peak rate will only be used if the call started and finished during the off-peak period. Thus any call which partially extends into the peak period will be charged at the peak rate.

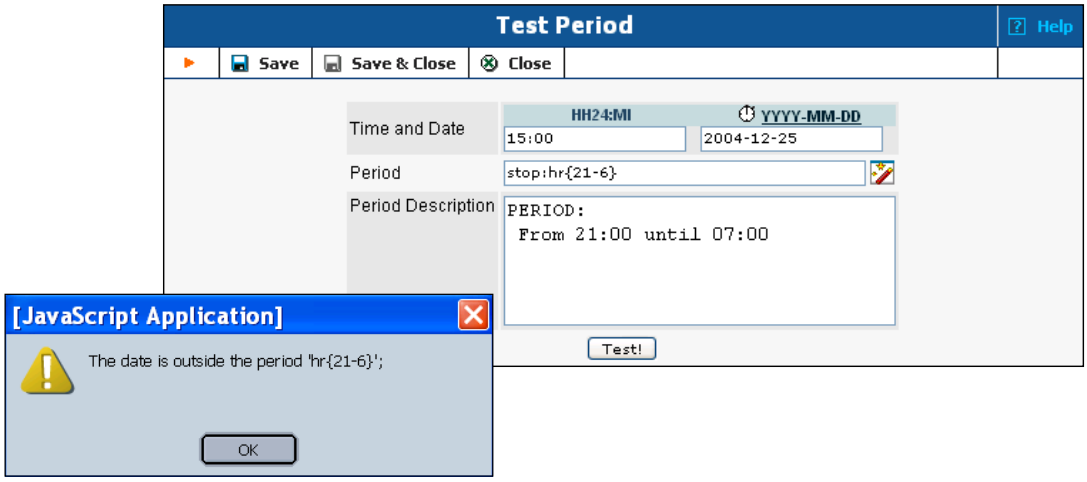
To evaluate your work, look in the top text area. The following text should be displayed:

```
From 6:00pm until 6:00am
   any day of any month
OR Sunday and Saturday
   of any month
OR 1
   of January
OR 24-26
   of December
```

If the definition is correct, click the **Finish** button.

Test the off-peak period

If you are unsure whether you have created a correct off-peak period definition, you may use the test utility to check if a specific moment in time fits into the period or not. In order to run the off-peak period test, either click the icon in the tariff information window, or use the **Test Period** button on the last page of the off-peak period wizard.



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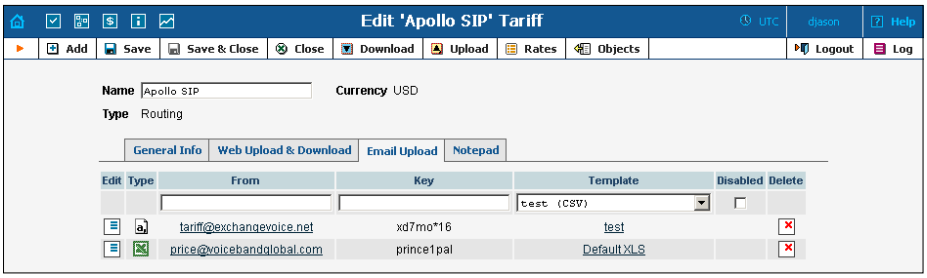
Now simply enter any time/date and click the Test button to check whether this moment fits into the off-peak period definition.

Web Upload/Download

Choose appropriate templates for web upload/download of tariffs. Read more about this in the **Templates** section.

E-mail Upload



Tariffs can be uploaded to the system from an e-mail received with an attached document in either CSV or XLS format.

Field	Description
Edit	Click the Edit icon to copy the current row in the form above for editing.
Type	Uploaded document type, either CSV or XLS file.
From	Sender's e-mail; to prevent unauthorized access, only trusted e-mail will be allowed.
Key	Security key; tariff will be accepted only if the correct key is specified in the message's subject line or body.
Template	Select a template to map information in the uploaded file using PortaBilling. Read more in the **Templates** section.
Disabled	Disable receipt of tariffs from this source.
Delete	Click the delete icon to remove the source.

NOTE: Due to the security risk, the processing of incoming e-mails is turned off by default. To reactivate, enable e-mail forwarding to the mail processing script in the /etc/aliases file on your slave server.

Rates

Peak and off-peak prices

It is possible to have two different sets of prices, one for peak and one for off-peak time. A call is always billed using one rate or another; this also applies to calls which start in the off-peak period and end in peak, or vice versa, i.e. there is no pro-ration. See above regarding how you can define whether the peak or off-peak rate should be used in this situation. By default, everything is considered peak time.

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Off-peak periods are defined using a powerful and flexible `Time::Period` module. The Off-Peak Period Wizard is also available to help you construct a period definition in an easy manner.

Charging the call (old-style method)

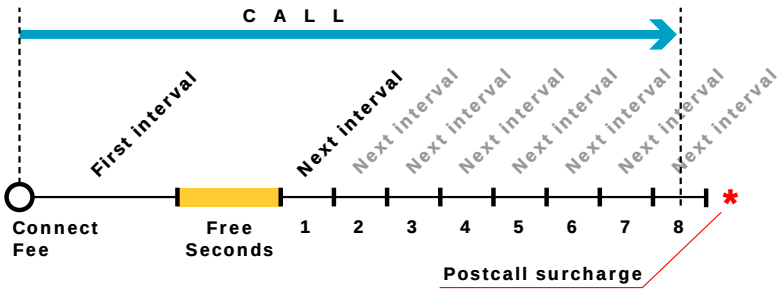

Figure 4-1

Figure 4-1 demonstrates how calls are charged. A **Connect Fee** is charged immediately upon connection, and all calls shorter than *First Interval_1* will be rounded to **First interval** seconds. Free seconds are granted after the *First interval*, so this part of the call is not charged. Calls longer than *(First interval+Free seconds)* will be rounded up to multiple **Next interval** seconds. After that, a **Post Call Surcharge** is applied. The call illustrated in the figure above will be charged using the following formula:

```
Amount_Charged = ( Connect_Fee +
   First_Interval * Price_First/60 +
  8 * Next_Interval * Price_N/60) * (1+Post_Call_Surcharge/100)
```

Parameters such as **First interval**, **Next interval**, **Price First** and **Price Next** can be specified per destination. **Connect Fee**, **Free Seconds** and **Post Call Surcharge** are defined on a per-tariff basis, and so are the same for all destinations in the tariff.

Managing rates online

Managing rates online is very convenient for maintaining existing rate tables and for reference purposes. In the case of new price lists or major updates, the offline method is better.

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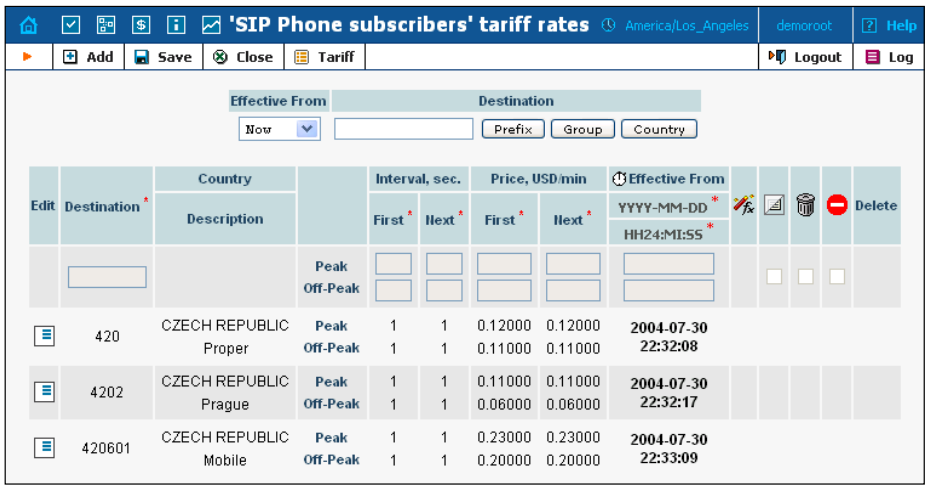

On the Tariff Management page, click the **Rates** icon for a tariff.

The filter at the top of the screen allows you to view rates depending on their Effective From date or Destination. The **Effective From** drop-down list allows you define whether only current rates ("Now") or all rates ever used ("->Now") will be shown.

To edit an existing rate, click the (**Edit**) icon next to it to copy rate details into the form. Note that if a tariff contains peak and off-peak rates there will be two rows of fields: the top one is for peak rates, and the bottom one is for off-peak rates.

Usually you will enter rate data for each destination separately. However, if the tariff has a **Destination Group Set** defined, by clicking on **G** in the Destination column header you can switch into "destination group" mode. Now you can enter a destination group name (e.g. UK-Mobile) instead of a prefix, and the system will automatically create rates for all of the destinations in that group.

Field	Description
Destination	Destination prefix. May be entered directly, e.g. "47" for Norway; or you can access the destinations directory by clicking the Destination link. In the destinations directory pop-up window, you can search for the desired prefix by country name.
Country	Country corresponding to the current destination.
First interval	First billing unit in seconds.
Next interval	Next billing unit in seconds.
Price first	Per minute price for first interval.
Price next	Per minute price for next interval.
Off-peak First interval	First billing unit in seconds for off-peak time.

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Off-peak Next interval	Next billing unit in seconds for off-peak time.
Off-peak Price first	Per minute price for first interval in off-peak time.
Off-peak Price next	Per minute price for next interval in off-peak time.
Effective Time	Exact time when the rate becomes effective. Click the icon to make the rate effective immediately. Click the **DD-MM-YYYY** link to set up the desired date using a pop-up calendar.
	Indicates if this rate uses a call rating formula. The icon indicates that there is no formula, thus old-style rating is used. The icon indicates that the rate already has a formula defined. Click on the icon to invoke the call rating formula wizard.
Rates properties	**Hidden**. This means that the rate is excessive (e.g. there are usually more than 500 rates for Argentina mobile because of different prefixes). This flag does not affect usage of the rate by the billing engine. It simply indicates that this rate may be omitted when making a list of rates for the end user. **Discontinued**. Note that marking a rate as discontinued takes effect immediately; you cannot discontinue a rate sometime in the future **Forbidden**. This means that no calls are authorized for this particular destination.
Delete	Click the delete icon to delete this rate. Only rates which are not yet active can be deleted.

The following columns are available only for tariffs of the **Routing** type:

Field	Description
Route Category	Route category, selected from among those already defined. If you do not wish to use different route categories, use the **Default** one.
Preference	Routing priority for this destination. 10 is the highest priority, 0 is the lowest (i.e. do not use this destination for routing at all).
Huntstop	If turned on, the billing engine will not try any routes for other vendors with a lower preference.

The following columns are available only for tariffs of the **Volume** type:

Field	Description
Volume	Enter the volume lot (in minutes). If you leave this field empty, it means that this is a normal cost-based rate.

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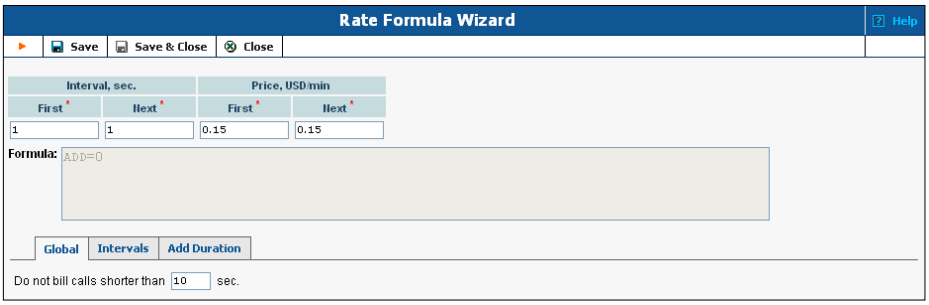
Click the **Save Edited** icon to save your changes.

NOTE: Off-peak fields appear only if a period has been defined for the tariff.

Call rating formula wizard

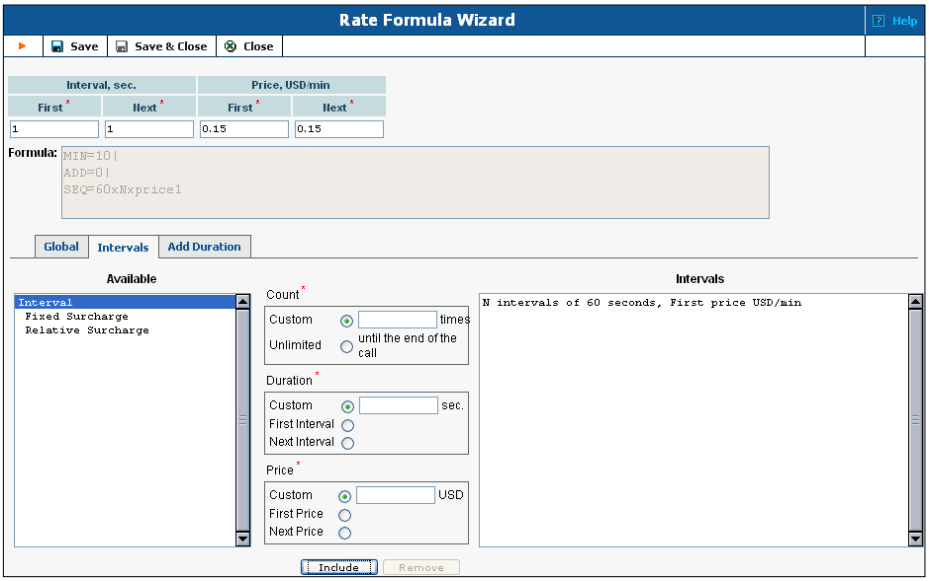
Because of the extreme flexibility of the call rating formula, it has a quite complex syntax. To avoid possible errors, the call rating formula wizard allows you to design a call rating formula easily.

The top table allows you to edit rate parameters (such as interval or price per minute) directly, below it the current formula is displayed (read-only), and finally there are three tabs for managing different formula parameters:



Global:

- **Do not bill calls shorter than** - See the detailed description of this feature in the PortaBilling100 User Guide.



Intervals:

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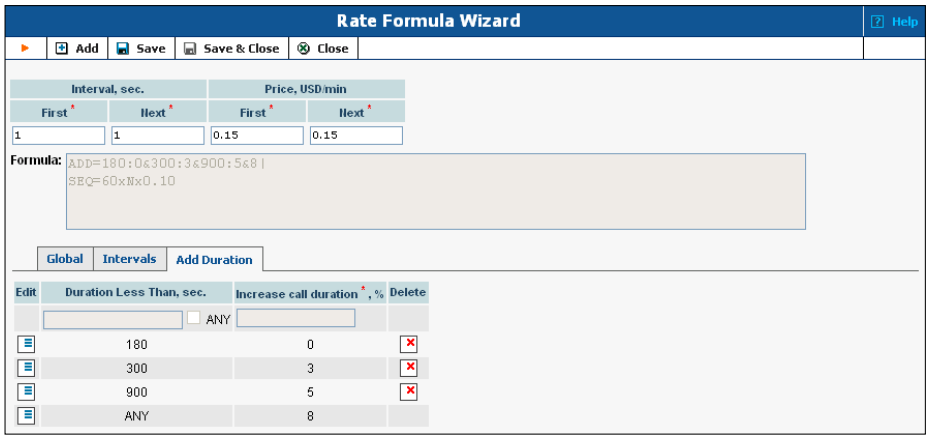
Here you can construct the actual call charge plan by defining a sequence of time intervals and surcharges.

1. Choose the element type from the list at left (**Available**).
2. Fill in the element parameters (such as interval duration, price, etc.).
3. Click the **Include** button to add this element to the formula.



Add duration:

NOTE: This option must be enabled in the config; by doing so you accept the responsibility for any legal issues related to use of this billing feature.

- **Duration Less Than, sec.** – Threshold for increasing call duration. The system will choose the entry with the maximum applicable threshold. Thus, if there are entries with 120, 300, 600, 900 and ANY seconds, and a call is made for 7 minutes, the second entry will be applied. **ANY** is a special case, and it means "any other call duration"; there must always be such an entry in the formula.
- **Increase call duration** – Defines how the call duration should be changed (increase in percentage; a 0 value means that the call duration should not change). Note that for several entries with an increasing threshold the percentage values must increase as well. Thus you can have the entries: 180:3%, 300:5%, ANY:7%; but you cannot have: 180:5%, 300:4%, ANY:3%.

Managing rates offline

The rates table may be prepared using a spreadsheet processor (e.g. MS Excel) and easily imported into PortaBilling. This is very convenient if you are going to make many changes. For example, you might increase all prices by 10%. To upload your rates file, proceed as follows:

1. On the Tariff Management page, click on the tariff name.
2. In the Edit Tariff window, click the **Upload .CSV** icon.

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3. In the Upload Rates window, click Browse…
4. Locate the Tariff-sample.csv, then click Open.
5. In the Upload Rates window, click Upload.
6. In the Edit Tariff window, click Close.

You can verify your work using the **Rates** feature.

Volume discount plans

Volume discount plans allows you to dynamically modify your rates depending on how much traffic a customer has already sent you. For instance, after he makes calls for 200 minutes (charged at the normal rate) he will get a 10% discount for every minute he calls over this limit.
A discount plan includes one or more discount schemes applicable to a certain destination group. "First 200 minutes for free, then normal rate with 10% discount over 500 minutes" is one such discount scheme, and it may be applied to the destination group "Asia", which includes China, Hong Kong, Singapore, Thailand and other countries.

Use the main Discount Plan Management screen to list all existing plans. Plans can be located using the search form, by selecting a reseller from the drop-down list or entering the plan's name. To edit a discount plan, click on its name in the list. The delete icon will be visible only when the discount plan is not in use (not assigned to any customer, account or product), allowing permanent deletion of the discount plan.

Add/Edit a discount plan

To add a new discount plan to the system, select Add to go to the discount plan creation screen. An existing discount plan can be edited by clicking its name in the list.

Field	Description
Name	The logical name of the discount plan object.
Managed By	By default – None. The plan can be assigned to a reseller (Managed by NNN) so that it is manageable from the Customer Self-Provisioning web interface.
Currency	Indicates which currency is used for billing calculations. All discounts in a plan are to be defined in this currency. A discount plan can only be assigned to customers, accounts and products using the same currency.
Destination Group Set	Discounts can be defined for individual groups (e.g. US&Canada, Asia, Western Europe) within this set. Once chosen during discount plan creation, they cannot be changed later on.
Counter	Each discount has internal counters associated with a

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Reset at	corresponding account or customer. These counters store the current value in minutes (or charged amount) of calls made to a specific destination group. The counters go up according to the customer or account's billing. • **Never** means the plan counters will never be reset (zeroed). This is convenient if you wish to provide a special promotion such as "500 free minutes of calls to Western Europe". In this case, the counter will always go up, and the normal rate will be applied after it reaches 500 minutes. • **Billing-period** means the counters of the plan will be reset when the customer's next billing period begins. If you have defined a discount "first 500 minutes for free", then the customer will have 500 free minutes in every billing period (month, week, etc.). Once chosen, this setting cannot be changed later on.
Description	Short description of discount plan.

Defining discounts for individual destination groups

After a volume discount plan has been saved, the Discounts tab will become available. To add a new discount to the plan, click the **Add** button. An existing discount can be edited by clicking the **Edit** icon on the row containing its details.

Field	Description
Destination Group	Enter the name of a destination group manually, or click the column header link (**Destination Group**) to choose a group from a searchable list inside the pop-up window.
Type	Select the threshold type: will you use thresholds based on the charged amount, or on the total call time? • **Amount** means the threshold is measured in currency units (e.g. USD), and the counters will go up by the amount which the customer should have been charged for the call before the volume discount was applied. • **Volume** means the unit is minutes, and the counters will go up by the same value as the charged call duration. Note the difference between *call duration* and *charged call duration*. For instance, if a rate specifies 5 minutes rounding and a customer has spoken for 3 minutes 42 seconds, he will be charged for 5 minutes and the counter will go up by 5 minutes as well.

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Discount scheme	Since the discount formula is complex, you cannot edit it directly. Click on the column header or the icon in order to launch the discount definition wizard (see the chapter below).

Discount definition wizard

The discount wizard provides users with a flexible tool for defining threshold values and corresponding discount values. A threshold defines the maximum counter value (call duration or charged amount) within which the current discount may still be applied. If the last available discount is to be applied regardless of the counter value (e.g. first 200 minutes – normal rate, up to 500 minutes – 10% discount, and 20% discount after that) then this last discount will be created with a special unlimited threshold.

Field	Description
Threshold	The threshold value is measured either in currency units or time units (minutes) according to the type of discount. The value entered must be numeric (with a period allowed) and greater than zero. To provide a special unlimited value for the threshold, check the **Unlimited** box. You cannot have two discount rows with the same threshold values.
Discount	The percentage discount value must be numeric (with a period allowed) in the 0 – 100 range. A 0% discount means "standard rate applied", while a 100% discount means "free call".

The billing engine decides which discount is to be applied, depending on whether the counter for the given destination has reached one of the defined thresholds. Note that the "charged amount" counters record the charges as they are defined in the tariff, i.e. before a volume discount is applied. If there is no "Unlimited" threshold discount, and the counter exceeds the last (i.e. biggest) threshold, any further calls would be billed according to the standard tariff rate.

For example:
Discount type - Volume, minutes

Discount is defined as 0..100 - 50%; 100..200 - 20%; 200..unlimited - 10%
The first 100 minutes are billed at a 50% discount (half-price from what is specified in the tariff), the next 100 minutes are billed at a 20% discount, and thereafter all calls receive a 10% discount.

Discount is defined as 0..100 - 100%

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The first 100 minutes are free; all minutes above that are billed at the tariff rate.

Discount type - Amount, USD. The tariff rate for the given destination is a flat 0.5 USD per minute.

Discount is defined as 0..10.00 - 0%; 10.00..20.00 - 10%; 20.00..unlimited - 20%
The customer begins making calls, and each call is charged according at the normal rate until the total charged amount exceeds $10.00. After that, the customer is given a 10% discount on calls.

NOTE: Let's look at a situation in which a customer's balance is $10.00 (and the volume discount counter is also $10.00). The customer makes a 30-minute call, and the tariff rate is $0.20/min. The call is charged as 30 * 0.20 – 10% = $5.40, and this value is stored in the CDR for the call. Thus the customer's balance will be modified by $5.40, to become 15.40. At the same time, the volume discount counter will go up by the amount without the discount. Thus the counter will go up by $6, to become $16.00.

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Products

A product is a combination of services that you provide to a customer for a price. For example, you decide to sell calling cards with 10 cents/minute calls to the Czech Republic for calls to a local access number in New York, and 15 cents/minute + 50-cent connection fee for calls to a toll-free line. In this case, your product will include two types of service:

- access via the local New York number, and
- access via the toll-free line,

with price parameters associated with each service.

Accessibility is the main component of a product definition. It specifies where your customers are allowed to use a service and how they should be charged for it. Accessibility allows you to specify three parameters to define an access point:

1. The gateway on which the service is used. What is the exact meaning of "gateway" in this context? For example, if a customer calls to gateway A, enters his PIN, and makes an outgoing call which is terminated on gateway B, is he using the service of gateway A, or B, or both? The correct answer is that the service is said to be provided at the point where authorization is performed. In the example above, since PIN authorization is performed on gateway A, then it is gateway A which must be listed in the accessibility.
2. Identification of the access number (method) on that gateway. This parameter allows you to use different types of services on the same gateway, for example, according to the access number the customer has dialed. (Access number is a very common case; in fact, you can use any string so long as it is provided by the application which handles the call).
3. Originating line information. You can separate accessibility entries based on originating line information (e.g. if the call was made from a home phone or a pay phone). Make sure your telecom provider supplies you with this information in the call setup.

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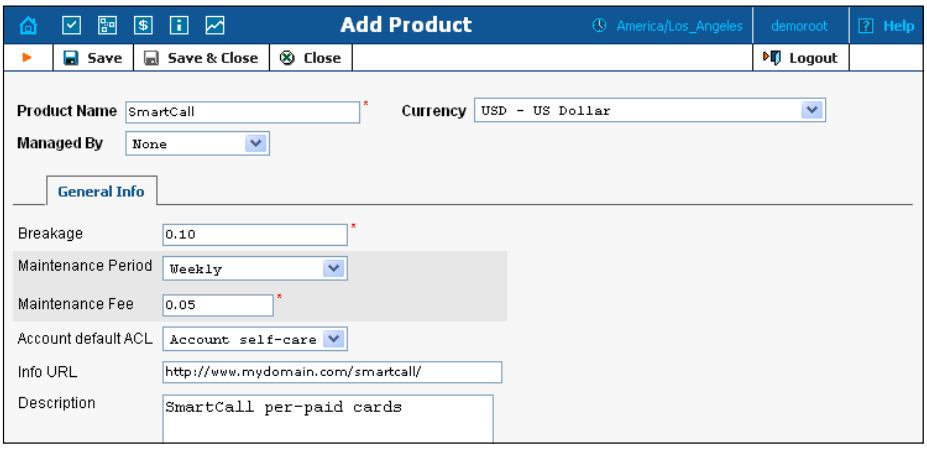

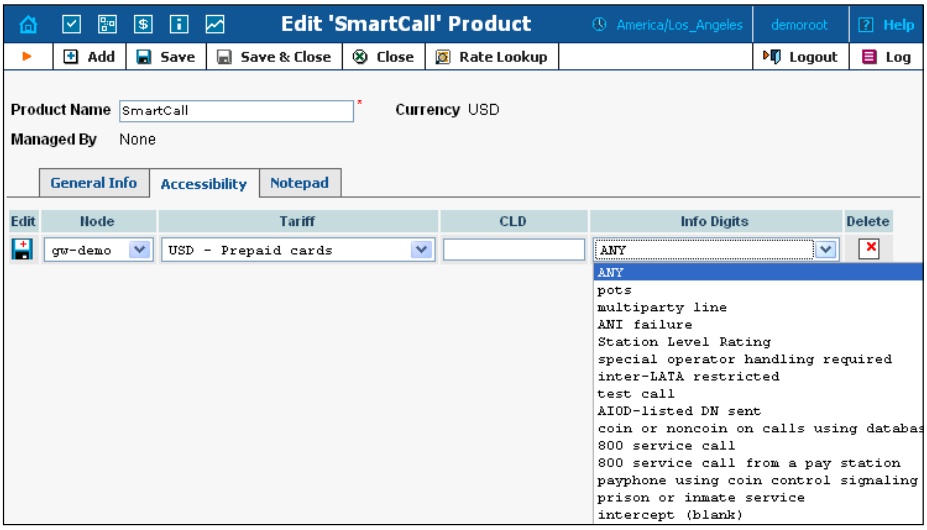

The basic information for defining a product is as follows:

Field	Description
Product Name	The logical designation of the product.
Currency	The currency in which the product will be maintained. To edit a currency, delete all accessibility entries for this product.
Managed by	By default – None. The product can be assigned to a reseller so that it is manageable from the Customer Self-Provisioning web interface.
Breakage	This value should be set by the administrator based on the currency and minimum price per minute. It is used in Account Management to obtain a summary of "depleted" (practically unusable) accounts. How it works: An account user could have a very small

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	balance, e.g. 0.015. This is not enough to make calls to most destinations, except perhaps calls to technical support and certain local calls. Thus, even though the account's balance is not yet zero, the account is basically unusable (and the customer will probably never use it). The administrator is interested in how many accounts are in this state, i.e. how many accounts are depleted.
Maintenance Period	Defines how often to apply the Maintenance Fee. The Maintenance Fee will be charged on the first day after an account is used for the first time, and thereafter according to a specified period, e.g. every week.
Maintenance Fee	Only defined when the Maintenance Period is set; the amount to charge any account using this product according to the schedule defined by the Maintenance Period.
Account Default ACL	Which ACL should be assigned to new accounts created with this product.
Default Discount Plan	This menu is not available in the "Add new" mode, but you can assign the discount plan to the product after it has been created.
Info URL	URL to an external website describing product features. Customers can access it by clicking on the **Product Info** link in the main menu of their self-care interface.
Description	Product description.

Accessibility

NOTE: The Accessibility tab is invisible in Add New mode, and will appear only when editing a product.

To add a new Accessibility entry:

1. click the **Add** button
2. choose a node and tariff from the drop-down lists
3. type in the CLD value, if any
4. click the **Save** button

To edit the Accessibility list:

1. click the (**Edit**) button
2. choose a node and tariff from the drop-down lists
3. type in the CLD value, if any
4. click the **Save** button

Accessibility by CLD Feature requires:
- Authorization of each account prior to a call.
- PortaBilling proprietary attribute must be passed in the authentication request. This can be done by modifying your TCL call control scripts.

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Online signup

Note: This tab is available only when the product is managed by a reseller.

Online signup is a reseller feature; it allows automated creation of accounts (and sub-customers, if necessary) when an end-user fills in a subscription form and payment card information and then, having successfully completed the subscription process, receives the credentials necessary to make phone calls.

Numerous online signup frontends can be developed using a combination of the "Subscription HTTP_REFERER" and "Validation Module" fields.

Read about "How to configure Web Subscription" in the **PortaBilling Guide Part II**.

Vendor Management

Vendors are your service providers, for example, termination partners or incoming toll-free line providers. Every time a call travels from your network to a vendor (via telephony or VoIP) there is a cost associated with it, and at this point PortaBilling will charge the account and customer for the call, as well as calculate your termination costs.

On the Vendor Management screen you may view a list of all registered vendors. This list provides the following information and activities:

Column	Description

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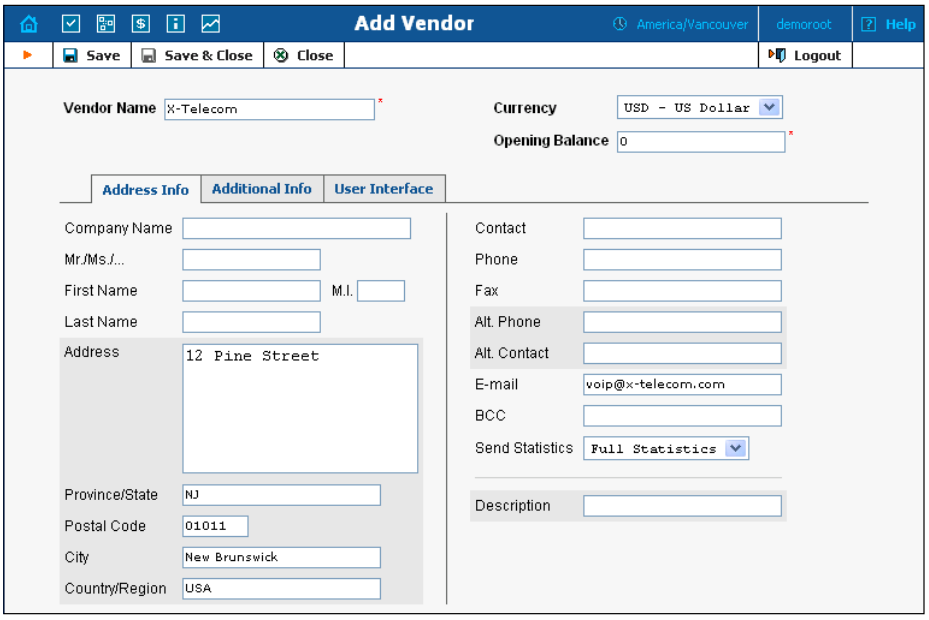
CDRs	Click the View ( ) icon to go to the CDR view page for this vendor.
Name	The vendor's name.
Connections	Click the connections ( ) icon to be taken to the connections management page for this vendor. Read more in the Connections section below.
Currency	The currency in which the vendor's account is maintained and paid.
Balance	The vendor's current balance.
E-mail	E-mail contact for the given vendor.
Delete	Click the delete ( ) icon to remove the vendor. The delete button will only appear if there are no CDRs or connections defined for the vendor.

Add/Edit Vendor



The Add Vendor page allows definition of a new client entity within PortaBilling. The information required is split into two tabbed sections: Address Info and Additional Info. The Edit Vendor page also contains the Notepad tab for making notes. The following information is required at the top of the form:

Field	Description
Vendor Name	Defines the vendor name as it will appear within the PortaBilling system. This is distinct from the **Company Name** field in the **Address Info** tab.
Currency	The currency must be specified by selecting it from the drop-down list of available currencies.

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Opening Balance	The starting balance for the vendor.

The information in all other tabs is optional, and need not be specified when creating the vendor.

Maintenance

The Maintenance tab allows the administrator to correct a vendor's balance.

Field	Description
Action	**Manual charge:** Use this transaction to adjust the vendor's balance in case of non-call related charges from the vendor. For instance, if the vendor has charged you for an equipment purchase. **Manual refund:** Use this transaction if you have received credit to your account. For instance, if you complained about the vendor's service quality and have agreed for certain funds to be credited toward future services.
Amount	Amount to charge/refund.
Visible comment	A comment on this transaction visible to the vendor in the CDR browser.
Internal comment	An internal comment on this transaction; not visible in the CDR browser, and only accessible directly from the database.

Additional Info

Field	Description
Billing Period	Defines the frequency of invoicing for this vendor.

User Interface

The User Interface tab content is identical to that described in the Common Features section of Admin Interface Part I.

Accounts

When you send traffic to the vendor's network, both parties are interested in securing the connection so that no one else can send traffic to the vendor, as this would then be billed to your account. When using SIP, it is possible to do this in a very convenient and secure way: by using digest authentication. In this case, the vendor will provide you with a username/password, which will be used to authorize every outgoing call from your network to this vendor. Here you can enter information about

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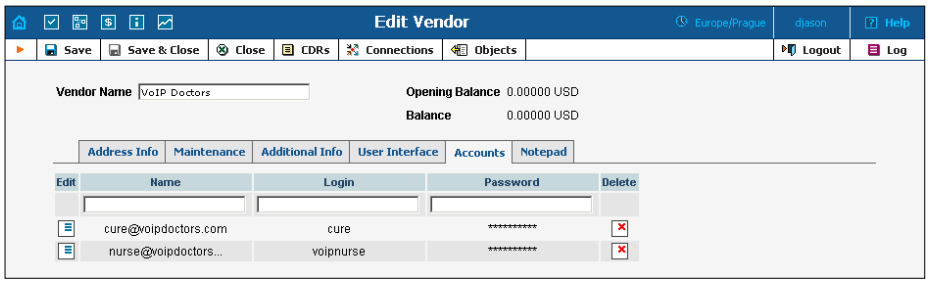
such accounts, so that they can be provided by billing to the SIP server automatically.



Connections

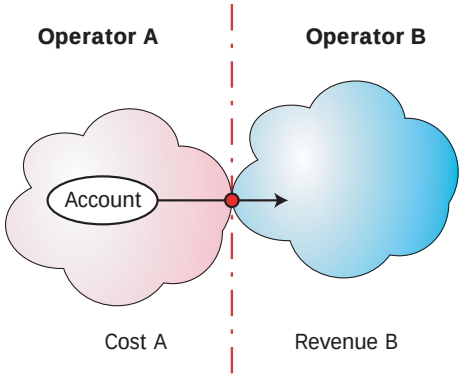
Definitions

Network

VoIP network - one or more VoIP entities that belong to a single operator.

Connection

Point of change of network ownership. Defined as a set of physical and logical parameters i.e. IP, Port, Timeslot, Call Type, Call Direction, etc.



Cost A = Revenue B

Operator

Network owner. Responsible for internetworking and wholesale in its network.

A connection defines the point where a call travels between the networks of two operators, one of whom is a PortaBilling owner. At this point, we will create a CDR for the vendor (the other operator) describing our costs. Also, if this was an egress call, we will create CDRs for both the account and the customer.

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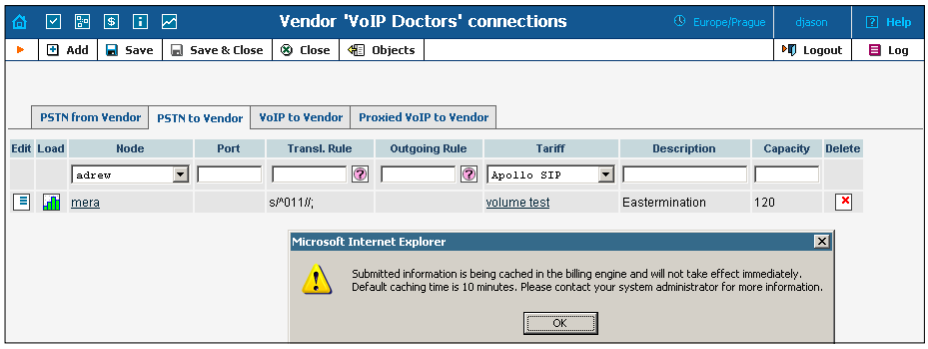
The Connections Management screen is broken down into call leg types using four tabs: PSTN from Vendor, PSTN to Vendor, VoIP to Vendor, and Proxied VoIP to Vendor. Under each tab there is an edit row and then a list of the existing connections for the given type.



To add a new connection, enter the information in the edit row and then select **Add**. To edit an existing connection, click the **Edit** icon next to the desired connection, modify the necessary fields, and select **Save**. The following fields and functions are provided in the listing:

Field	Description
Edit	Copies the connection information into the edit row.
Load	Opens the load graph for this connection.
The following three columns are only available for PSTN connections:	
Node	Name of the node used for this connection
Port	Only on PSTN related connections. The specified port for PSTN origination or termination. The port can be set using wildcards: **'_'** - match any symbol **'%'** - match any sequence of symbols The wildcard symbols **'*'** and **'?'** should not be used.
CLD	Only available for "PSTN from vendor" connections. Specifies the access number which the customer dialed in order to reach your network.
The following column is only available for VoIP connections:	
Remote IP	IP of the remote gateway. The value in this field should be in one of the following forms: • IP address, e.g. `23.45.67.89` • IP address and port, e.g. `34.56.78.90:5062`. This is required if the remote gateway uses port different from the standard one. • Special keywords `ANY` or `SIP-UA` • For the prefix-based connection matching specify a value in the form of PREFIX:NNN, where NNN is the actual prefix. For example

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	`PREFIX:34567#`
Translation Rule	Perl style regular expressions applied to the number in order to convert it from a vendor-specific format into the unified format used in billing.
Outgoing Rule	If necessary, the received number can be modified before sending it to the vendor, for example, if a tech prefix is required. Only applicable if the node which routes the call retrieves routing information from PortaBilling (e.g. PortaSIP or MVTS).
Tariff	The tariff used to calculate the cost of terminating calls via this connection.
Description	A logical description of the connection.
Capacity	Number of simultaneous sessions the connection can support. This parameter is used only to correctly scale the load graph for this connection, and not for actual call handling – this is done by the gateway itself.
Account	Only applicable for outgoing SIP connections. Defines which username/password should be used for authorization of outgoing calls via this connection.
Delete	Click to remove the connection.

The following two columns are visible only if you are using multiple protocols in your system and have the `ShowConnectionProtocol` feature enabled. By default this option is turned off, and every connection is assumed to be SIP-capable only.

Field	Description
H323	Check if this connection is capable of handling H323 calls.
SIP	Check if this connection is capable of handling SIP calls.

Customer Management

On the Customer Management screen you may view a list of all registered customers, or use search filters to display a specific set of customers only.

Filter value	Description
ANY	All of the customers registered in the system
Direct customers	Customers who are directly owned by your company (who have a business relationship with you, receive bills from you, and pay to your accounts). This may include both resellers and retail customers.
All reseller	Only customers of the reseller type.
All retail	All retail customers; this includes your own retail

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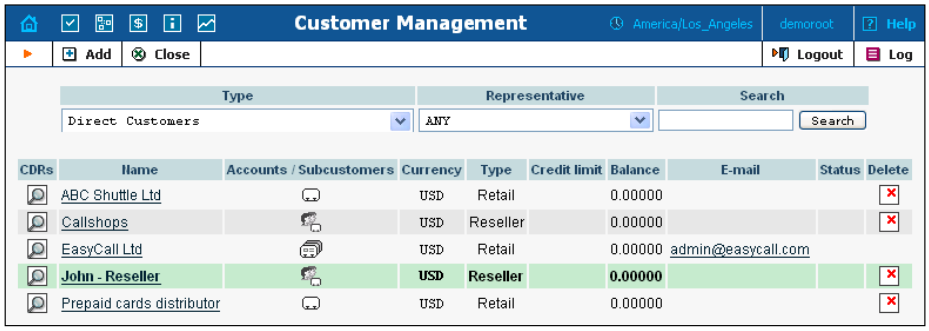
	customers and those of your resellers.
Direct retail	Only retail customers who are owned by your company.
Sub-customers of Reseller NNN	All sub-customers of a specific reseller.
Representative	Only customers related to a specific representative.
Search	Filter by name. When you enter a value in the search field, all customers who have the search string in their customer name, company name, or first/last name will be displayed.

The list provides the following information and activities:



Column	Description
CDRs	Click the View ( ) icon to go to the CDR view page.
Name	The customer's name.
Accounts/ Sub-customers	Click the Accounts icon to go to the Account Management screen (for retail customers) or the Sub-customers Management screen (for resellers).
Currency	The currency in which the customer's account is maintained and billed.
Type	The customer may be either a reseller or a retail customer.
Credit Limit	The credit limit applicable to the customer's account (if any).
Balance	The customer's current balance.
E-mail	E-mail contact for this customer.
Status	The status of the customer's account. The icon will appear if a credit has been exceeded. The customer blocked icon means that all accounts of this customer have been blocked. The frozen icon means that periodical payments for this customer have been suspended due to repeated errors (for instance, the customer canceled his credit card and did not enter information about a new card in

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	PortaBilling).
Delete	Click the delete ( ) icon to remove the customer. The delete icon will only appear if there are no CDRs.

Add/Edit Customer

The Add Customer page allows definition of a new client entity within PortaBilling. The information required is divided into four tabbed sections: Address Info, Additional Info, Payment Info, and Self-Care Info. The following information is required at the top of the form. Information on all the other tabs is optional, and need not be specified when creating the customer. Once it has been created, the customer cannot be changed from a retailer to a reseller, or moved under another reseller.

Field	Description
Customer Name	Defines the customer name as it will appear in the PortaBilling system. This is distinct from the **Company Name** field in the **Address Info** tab.
Blocked	Blocks *all* accounts of this Customer
Currency	The currency must be specified by selecting it from the drop-down list of available currencies. Once saved, the currency cannot be changed.
Opening Balance	The starting balance for this customer.
Type	This can be either "Reseller" or "Retail".

Address Info

The Address Info tab provides most of the commonly required contact information. The **Send Statistics** select menu is worth mentioning. The default choice is **Full Statistics**, whereby the customer will receive an e-mail with an attached CSV file after the billing period is closed, containing all the calls made by his accounts. If invoices are being generated for this customer, an invoice will be attached to the e-mail as well. The CSV file containing all calls may be rather large, so it is possible to use the **Summary Only** option. When this option is used, the customer will only receive a brief summary e-mail. Finally, it is possible to turn off e-mail statistics by choosing the **Do Not Send** option. Also note that you may allow your account manager to receive a copy of every e-mail sent to the customer by entering his e-mail address in the **BCC** field.

Maintenance

The Maintenance tab allows the administrator to correct a customer's balance.

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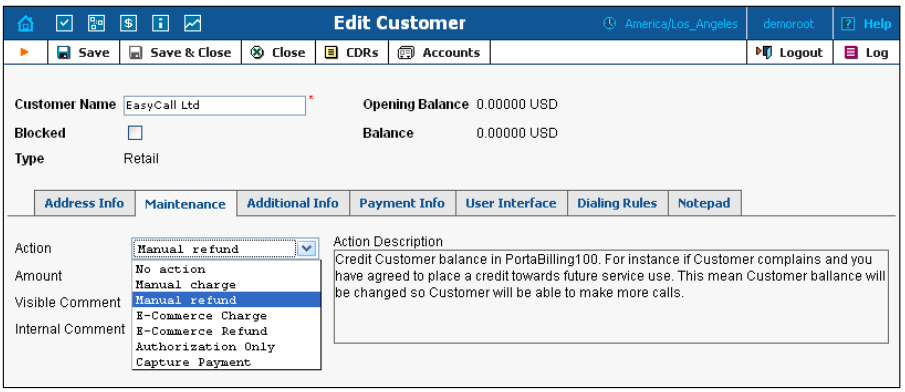

Field	Description
Action	**Manual Charge:** Customer's debit balance in PortaBilling100; for instance, if you are selling SIP phones to a customer. This means the balance will be changed so that the customer is able to make fewer calls. **Manual Refund:** Customer's credit balance in PortaBilling100; for instance, if the customer files a complaint and you agree to give him credit toward future service use. This means the balance will be changed so that the customer is able to make more calls. **E-Commerce Charge:** Transfers a given amount from a customer's e-commerce account to a company merchant account and issues credit toward the customer's balance in PortaBilling100. **E-Commerce Refund:** Transfers a given amount from a company merchant account to a customer's e-commerce account; for instance, if a customer files a complaint and you agree to a refund. This transaction will not affect the customer's balance in PortaBilling100. **Authorization Only:** Verifies whether the customer's e-commerce account is valid and reserves a given amount. This will return a Transaction ID, which may be used later in a Capture Payment transaction. This transaction will not affect the customer's balance in PortaBilling100, nor the customer's e-commerce account. **Capture Payment:** Transfers a given amount from a customer's e-commerce account to a company merchant account and issues credit toward the customer's balance in PortaBilling100. This requires the Transaction ID obtained via an Authorization Only transaction. The amount must be equal to or

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	less than that in the corresponding Authorization Only transaction.
Amount	Amount to charge/refund.
Visible comment	A comment on this transaction visible to the vendor in the CDR browser.
Internal comment	An internal comment on this transaction; not visible in the CDR browser, and accessible only directly from the database.

Additional Info

Field	Description
Tariff	The tariff to be applied to this customer. All outgoing calls made by accounts under this reseller will be charged according to this tariff. This option is available only when the customer type is Reseller.
Incoming Tariff	Tariff for charging a reseller for incoming calls (e.g. toll-free lines). Only available if the `ChargeCustomerForIncomingCalls` feature is turned on in `porta-admin.conf`
Routing Plan	Routing plan to be applied to this customer.
Billing Period	Defines the frequency of invoicing for this customer.
Invoice Template	Defines the Invoice Template for this customer. See the **Templates** section for more information.
Terms	Payment terms, such as "Due on receipt".
Representative	Assigns a representative to this customer. See the **Representatives** section for more information.
Tax ID	Customer's tax ID.
Callshop Enabled	Defines whether callshop features (timer, receipt, etc.) are available. Not available for direct customers, while for resellers both the reseller and a particular retail customer must have this option enabled in order to use the callshop functionality.

Payment Info

The Payment Info screen defines customer payment characteristics. In addition to normal payment information (preferred payment method, credit card number, etc.), there is also a **Credit Limit** field. If left empty, no credit limit is enforced. Otherwise, if Radius authentication is enabled, calls exceeding the limit can be denied.

Retention Restrictions

IMPORTANT! A merchant may not use account and transaction information for any purpose other than assisting completion of a payment card transaction, or as specifically required by law. Merchants may collect

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a payment card number and expiration date independently of a payment card transaction only with the express consent of the cardholder. A merchant may only retain this information for the sole purpose of facilitating future payment transactions. A merchant must not provide this information to any other person except for the sole purpose of assisting completion of a payment card transaction.

User Interface

The login and password information for Customer Self-Care refer to the credentials required on the self-care web page. An easy-to-remember yet secure password may be generated automatically by clicking the **Auto** button.

Check "Periodical payment management enabled" on the Customer Self-Care interface so that the customer himself can manage his periodical payments. The Periodical Payment Tab will appear only if the customer's currency can be processed by at least one of the existing Payment Systems.

Date & Time Format
PortaBilling allows the administrator to define both input and output date and time formats for each customer registered in the system.

By making changes to the date and/or time format on this page, customers will be able to enter dates and times in the desired format throughout the entire PortaBilling100 Customer Self-Provisioning Interface, on invoices, and so on (see the screenshot below).

See the **User Management** section for examples of date and time format usage.

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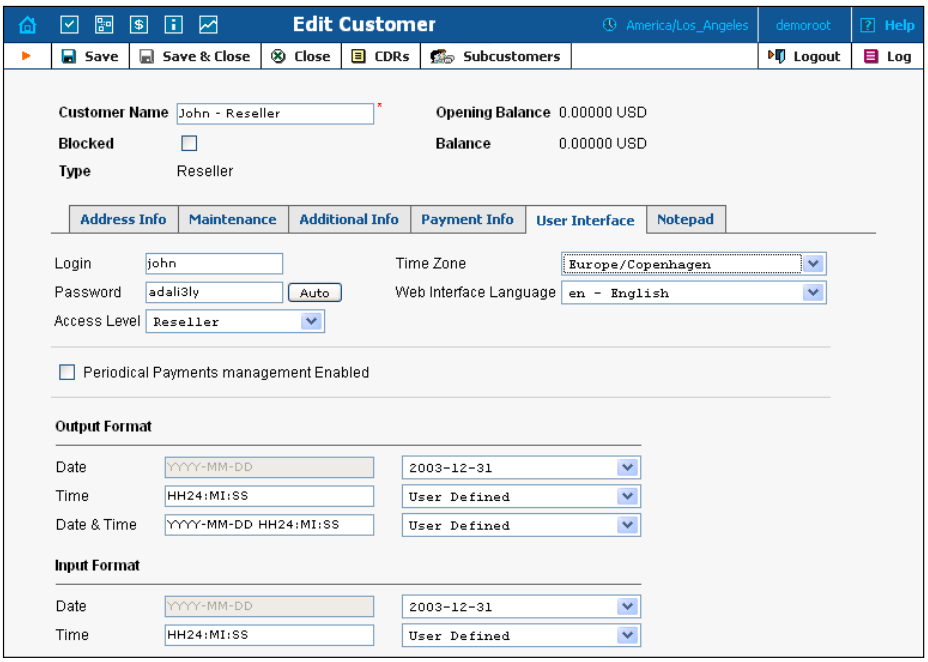
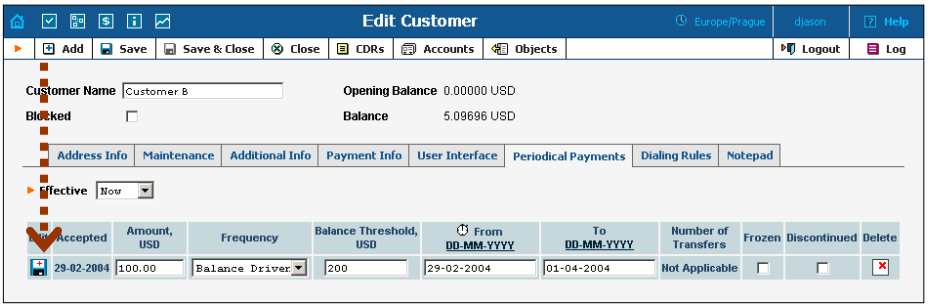


Periodical Payments

Periodical payments management allows the administrator and customers to set up the following parameters for automated periodical payments. All the registered payments for a customer are listed. The **Effective** drop-down list allows you to define whether only current payments ("Now") or all payments ever processed ("->Now") will be shown.

Choose ("Now->") to see "future" payments, or "All" to list all payments. ("Now") is the default value for this filter. The information in the chart below is provided in the payments listing. To add a new payment, click the **Add** button.



Field	Description
Amount	Specify a fixed amount to be paid, or click the **Pay Balance** icon (not available when the frequency is balance driven) to pay the current balance with a certain periodicity.
Frequency	Balance driven, weekly, or monthly.

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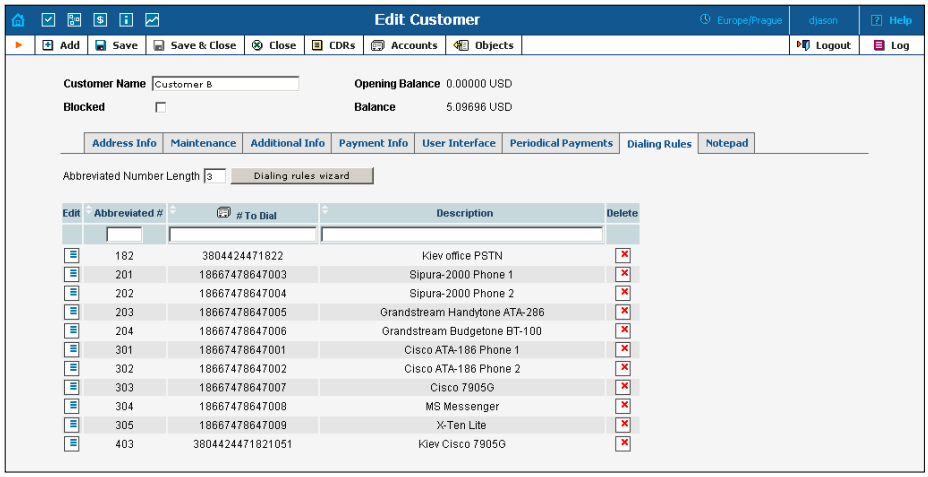
Balance Threshold	Only available when the frequency is balance driven. Payment will be triggered when the balance is higher than the specified threshold.
From, To Date	Dates when the payment will remain active. Click the stopwatch icon to make the payment active **immediately**.

Dialing Rules

The **Customer Dialing Rules & Abbreviated Dialing** feature works with both SIP and H.323, with adequate support from either the SIP Server or Cisco TCL IVR. A PortaBilling customer can set up dialing rules as an international prefix, outside prefix, direct number (e.g. 911), or abbreviated dialing for his accounts.



To add a new abbreviated dialing, click the **Add** button and enter the following information:

Field	Description
Abbreviated #	The number the end-user will dial on his phone
# to Dial	The number the call will be forwarded to. You may enter the ID of one of the customer's accounts (use the icon for a pop-up window where you can see all of them) or any phone number. If you do not enter anything in this field, then the abbreviated number is considered to be a direct number, or "dial as is". This is useful for making sure that special numbers (e.g. 112) will never be converted by other translation rules.
Description	Description of this abbreviated number, e.g. "Andrew's IP phone".

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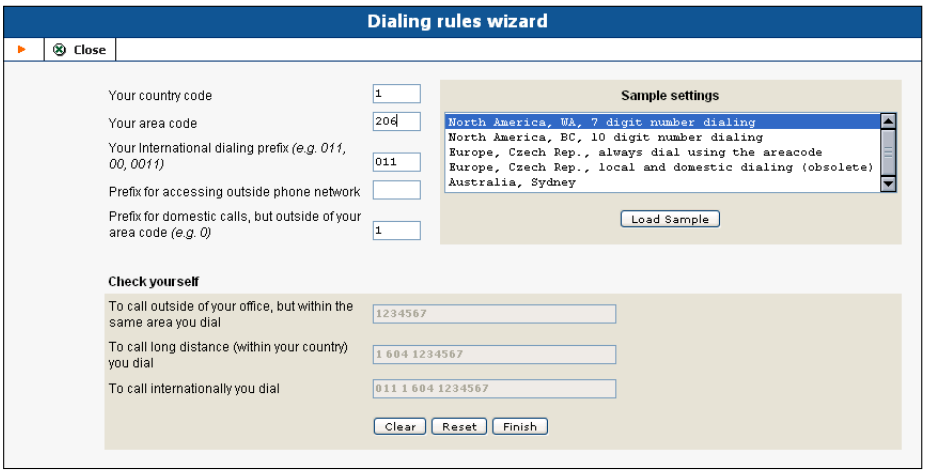
In order to define the phone number format which is used by this customer's accounts, click **Dialing rules wizard** to activate the wizard.

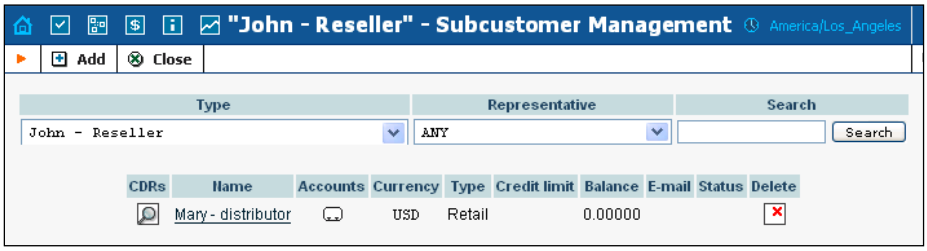

Dialing rules wizard
Close
Your country code
1
Your area code
206
Your International dialing prefix (e.g. 011, 00, 0011)
011
Prefix for accessing outside phone network
Prefix for domestic calls, but outside of your area code (e.g. 0)
1
Sample settings
North America, WA, 7 digit number dialing
North America, BC, 10 digit number dialing
Europe, Czech Rep., always dial using the areacode
Europe, Czech Rep., local and domestic dialing (obsolete)
Australia, Sydney
Load Sample
Check yourself
To call outside of your office, but within the same area you dial
1234567
To call long distance (within your country) you dial
1 604 1234567
To call internationally you dial
011 1 604 1234567
Clear
Reset
Finish

The upper part of the wizard screen allows you to enter important dialing parameters such as your international dialing prefix. Several sample settings are provided for your convenience. For example, in order to load example settings for "traditional" North America dialing, select "North America, WA, 7 digit number dialing" and click **Load Sample**.

In the bottom part of the wizard screen you can check whether you have described the numbering format correctly. Make sure, for all three examples provided (local, domestic and international call), if this is the way you want to dial the numbers.

Add/Edit Customer under a Reseller

This is essentially the same as for management of customers as described above, the sole difference being that you can only create sub-customers of the Retail type.



Account Management

An account is the user of a product such as prepaid cards, voucher-based cards, or credit calling plans. Each account in PortaBilling is associated

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with a customer. The Account Management screen, accessible from the Customer interface by clicking the **Accounts** button, shows you a query screen for listing existing accounts.

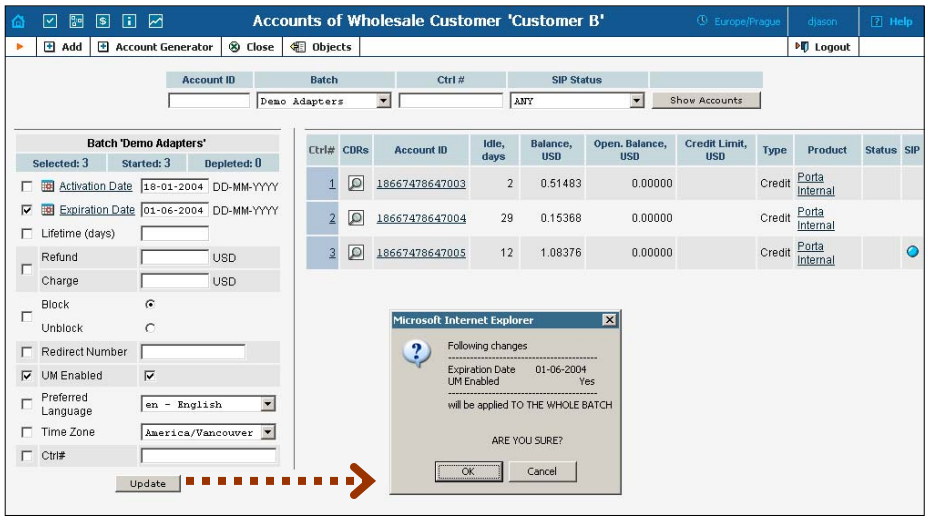
Account listing

Search Filter

There may be a very large numbers of accounts in the system, so it is advisable to limit your search using the filter functionality.

Field	Description
Account ID	The primary identification for this account; an alphanumeric string. Note: the % wildcard symbol may be used.
Batch	Logical name for a group of accounts. Select from a list of all the customer's batches to enable the batch update pane.
Ctrl#	Enter control numbers and/or number ranges separated by commas. For example: 1,3,8-12
SIP Status	Default – ANY; using this function, you can display either logged-in or logged-out accounts only.

Batch update pane



Field	Description	
Account ID	The primary identification of this account; an alphanumeric string.	
Ctrl#	Enter control numbers and/or number ranges separated by commas. For example: 1,3,8-12	
ACCOUNTS		
Status	Zero balance	Expired

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	Not active Credit exceeded	Blocked Customer blocked (see **Edit Customer**)
Ctrl#	Click via Ctrl#, or enter control numbers and/or number ranges separated by commas. For example: 1,3,8-12	

The batch update pane can be activated by selecting a batch in the filter at the top of the interface, or by selecting the batch name from the list of customers' accounts. The basic functionality of this update pane allows users to specify which attributes of all accounts in the results set should be modified. For example, in order to increase the balance of all accounts by 10 USD, the user should:

- Check the box next to **Refund/Charge** to indicate that this is one of the updates that should occur,
- Enter "10" next to **Refund**,
- Click the **Update Batch** button at the bottom, and
- Approve the changes when the confirmation dialog appears.

When the page refreshes, the changes will be reflected in the result listing.

Note: If you perform a balance adjustment *before* an account is used, it will be regarded as a change to the opening balance, and will not be reflected in the CDRs. For example, if you create a prepaid account worth $10, then realize you have actually sold it to the customer for $20, and so add the extra $10 to the card, to the customer it will look as if the card originally had $20 on it.

Account Info / Add Account

To add a new account, select **Add**. For bulk account generation, select **Account Generator**.

The Account Info page provided for the administrator is similar to the Add Account interface; however, the majority of account details are read-only. The administrator has the ability to modify only the Web Password, VoIP Password, Account Balance, Credit Limit, Product, Time Zone, Redirect Number, Blocked Status, and Preferred Language. When making such changes, the administrator can use the Notepad tab to provide a comment detailing the reason for these changes (for example, "product changed, credited $50").

Changes can be confirmed by selecting **Save** or **Save&Close**.

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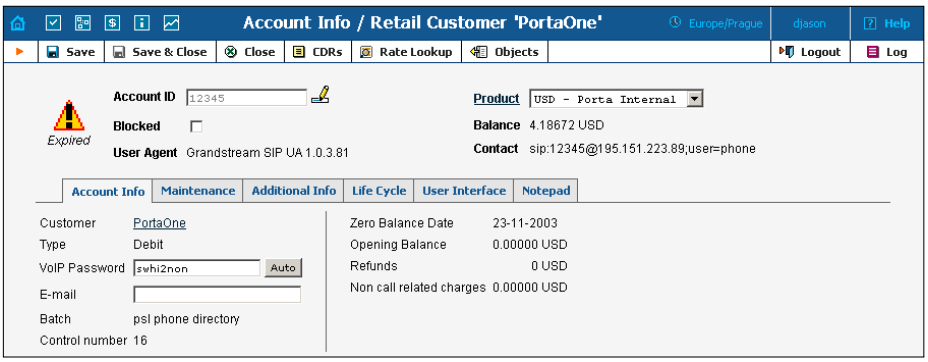

Field	Description
Account ID	The primary identification of this account.
Blocked	Specifies whether the account is blocked or unblocked. The account will be unusable if this is checked; it is usually unblocked automatically when the account is used for the first time.
Product	The product providing pricing plans for this account.
Balance	The balance for this account.
User Agent	If this account is currently used by a SIP UA to register with the SIP server, the user agent identification info is displayed.
Contact	The URI of the user agent, used by the SIP Proxy to contact it.
Account Info Tab	
Account Type	The account type may be "Debit", "Credit", or "Voucher". Debit is usually associated with prepaid cards. Credit is a type of account that will be invoiced for incurred costs. Voucher accounts are "refill coupons" for debit accounts.
Credit Limit	Only available when the account type is set to "Credit". Defines the credit allowance in the currency specified in the product.
VoIP Password	The password to be used to authenticate any calls made using this account.
E-mail	If an account has e-mail info associated with it, the owner of the account can reset the password for self-care access, and the new password will be sent to this e-mail address.
Batch	Accounts are grouped into batches. If a new batch name is provided in the text field, a new batch will be created when you add the account. Otherwise, an existing batch should be selected from the drop-down list.
Control Number	Read-only. The sequential number of the account in the current batch. Batch name and control number uniquely define the account ID, which is often used for prepaid calling cards.

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Zero balance date	Applicable only for debit accounts, specifies when the account has used up all of the available funds.
Opening Balance	The opening balance for this account.
Refunds	The amount refunded to the account owner.
Non-Call Related Charges	Charges not directly associated with calls the account has made; for instance, a maintenance fee or login fee.
Maintenance Tab	
Field	**Description**
Action	**Manual Charge:** The debit account balance in PortaBilling100; for instance, if you are selling SIP phones to a customer. This means the balance will be changed so that the account is able to make fewer calls. **Manual Refund:** The credit account balance in PortaBilling100; for instance, if the account files a complaint and you agree to give credit toward future service use. This means the balance will be changed so that the account is able to make more calls. **E-Commerce Charge:** Transfers a given amount from an account's e-commerce account to a company merchant account and issues credit toward the account's balance in PortaBilling100. **E-Commerce Refund:** Transfers a given amount from a company merchant account to an account's e-commerce account; for instance, if a customer/account files a complaint and you agree to a refund. This transaction will not affect the account's balance in PortaBilling100. **Authorization Only:** Verifies whether the account's e-commerce account is valid and reserves a given amount. This will return a Transaction ID, which may be used later in a Capture Payment transaction. This transaction will not affect the account's balance in PortaBilling100, nor the account's e-commerce account. **Capture Payment:** Transfers a given amount from an account's e-commerce account to a company merchant account and issues credit toward the account's balance in PortaBilling100. This requires the Transaction ID obtained via an Authorization Only transaction. The amount must be equal to or less than that in the corresponding Authorization Only transaction.
Amount	Amount to charge/refund.
Visible comment	A comment on this transaction visible to the customer in the CDR browser.
Internal comment	An internal comment on this transaction; not visible in the CDR browser, and accessible only directly from the

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	database.
	Note: If you perform a balance adjustment *before* an account is used, it will be regarded as a change to the opening balance, and will not be reflected in the CDRs. For example, if you create a prepaid account worth $10, then realize you have actually sold it to the customer for $20, and so add the extra $10 to the card, to the customer it will look as if the card originally had $20 on it.
Additional Info Tab	
Preferred Language	The language the user prefers when interacting with an IVR application.
Redirect Number	Specifies the number to be sent back to the IVR in an authorization confirmation. For example, this might be a redirect to a technical support number in an IVR application. Another example might be a quick-dial number for prepaid accounts. (In this case, the redirect number may be maintained via web self-provisioning.)
UM Enabled	Allows the account user to access the unified messaging system. To find out more, go to: **www.portaone.com/solutions/portasip**
UA Profile	Indicates the UA profile assigned to the account. Default – not set.
MAC Address	Hardware address of the dedicated VoIP adapter for this account's owner. This is required in order to create a unique configuration file for the particular adapter.
Follow Me Enabled	Activate follow-me service for this account. An extra tab Follow-me will appear in the account info where you can define parameters of the service (destination numbers, timeframe when they can be used, etc).
E-commerce enabled	Allows the account's owner to make online payments or setup periodical payments on the account self-care page.
Discount plan	Assign a discount plan to this account. When new account is created, by default it will be assigned discount plan which is associated with the account's product.
Life Cycle Tab	
Activation Date	The date from which the account is usable.
Expiration Date	The date from which the account will be unusable. If you do not want the account to expire, leave this field blank. Note: This date is assumed to be in the billing server's time zone, not the account's.
Lifetime	Relative to the activation date, the account will expire on first usage date + lifetime days. If you do not want to use this feature, leave the field blank.
User Interface Tab	
Login	Account login for the account user interface. Click the Account ID button to set the login as identical to the

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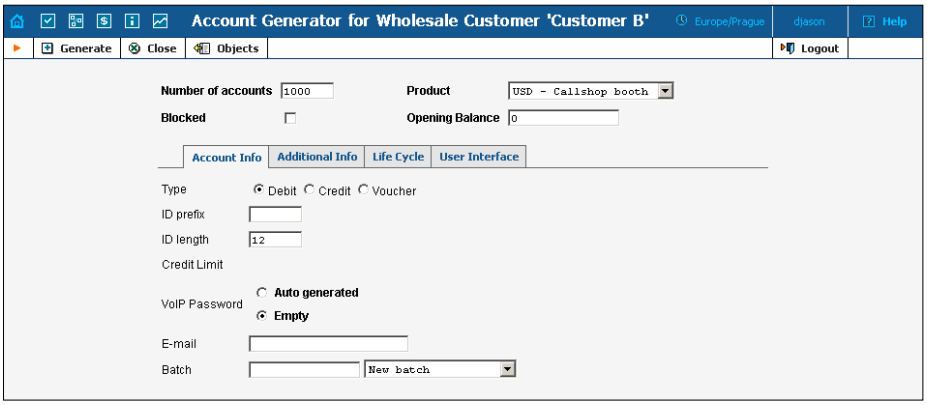
	Account ID.
Password	User interface password for the account.
Access Level	Access level assigned to the account.
Time Zone	Time zone for the account.
Web Interface Language	Displays the account user interface in a particular language.

Account Generator

The Account Generator should be utilized when large numbers of accounts are to be generated (for example, when issuing prepaid cards) so that individual accounts need not be entered manually. The account IDs will be randomly generated, as will the web password, so as to prevent possible defrauding. The generation process will run offline, so the accounts will not be visible from the Account Management page until it is completed. Once finished, the customer will receive an e-mail notification regarding task completion, as well as another e-mail listing all the accounts in CSV format, with the values "Batch", "Control Number" (a sequential index), "PIN" (Account ID), "Web login" (by default identical to the account ID) and "Password" (the web password).



The Account Generator interface is very similar to Add Account, with the following exceptions:

Field	Description
Number of Accounts (replaces Account ID)	The number of accounts to be generated.
Account Info tab	
ID prefix	Preset leading digits in the account ID.
ID length	Total ID length, including ID prefix.
VoIP Password	Can be generated automatically, or left empty

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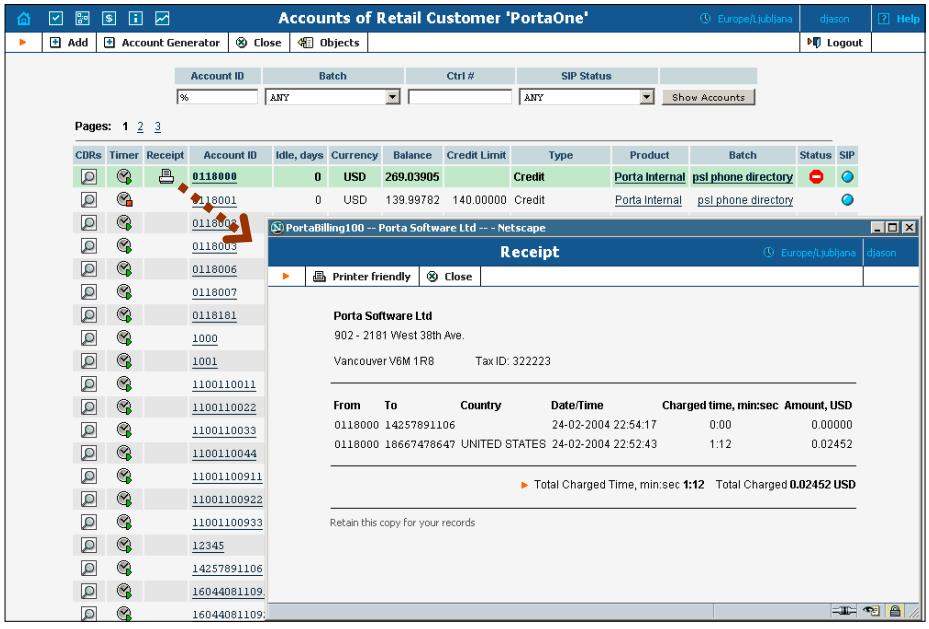
	to allow end-users to login using account ID only.
E-mail	The e-mail attribute of an account contains the e-mail address of the account's owner, so that he can reset the account's password. Since many accounts will be generated at once and assigned to different owners, the best choice is probably to leave this field blank. Do ***not*** enter the e-mail address of the person who is to receive information about new accounts in this field; this e-mail will be sent to the current user, who created the accounts.
	User Interface tab
Login	Can be set as identical to the account ID, or left empty to disable access to the account self-provisioning interface.
Password	Can be generated automatically, or left empty to allow end-users to login using the account ID only.

Callshop features



The account list screen can be used by a callshop operator to track calls made in callshop cabins, to block an account after a call has been placed, and to print receipts for services provided. When someone wants to place a call, the operator clicks the Start Timer icon, which automatically unblocks the account. After the call, when the user is ready to pay, the

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operator clicks the Stop Timer icon, and the Print Receipt icon appears. Clicking this icon will initialize the receipt pop-up.

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5. Help Desk

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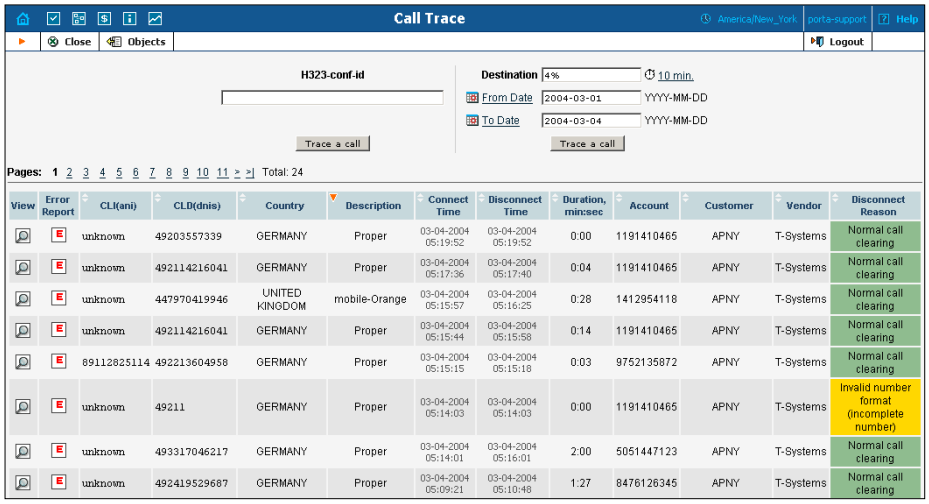
Call Trace

The call tracing utility allows you to determine the characteristics of a specific call when you know the **h323-conf-id** or the **destination**, which may be specified exactly, or using a wildcard. (For example, all calls to England may be specified as "44%" in the destination field). The date range for the search must be specified, but it is highly recommended that it be set to the smallest range necessary, in order to reduce waiting time and server load. Ideally, the search window should contain only one day.

To initiate a query, click the **Trace a Call** button. If no results appear, then try broadening the query. When results appear, the desired call must be located within the result set. If there are too many results, they will be divided across pages, though it is advisable to narrow the query in this case.



View	Error Report	CLI(ani)	CLD(dnis)	Country	Description	Connect Time	Disconnect Time	Duration, min:sec	Account	Customer	Vendor	Disconnect Reason
	E	unknown	49203557339	GERMANY	Proper	03-04-2004 05:19:52	03-04-2004 05:19:52	0:00	1191410465	APNY	T-Systems	Normal call clearing
	E	unknown	492114216041	GERMANY	Proper	03-04-2004 05:17:36	03-04-2004 05:17:40	0:04	1191410465	APNY	T-Systems	Normal call clearing
	E	unknown	447970419946	UNITED KINGDOM	mobile-Orange	03-04-2004 05:15:57	03-04-2004 05:16:25	0:28	1412954118	APNY	T-Systems	Normal call clearing
	E	unknown	492114216041	GERMANY	Proper	03-04-2004 05:15:44	03-04-2004 05:15:58	0:14	1191410465	APNY	T-Systems	Normal call clearing
	E	89112825114	492213604958	GERMANY	Proper	03-04-2004 05:15:15	03-04-2004 05:15:18	0:03	9752135872	APNY	T-Systems	Normal call clearing
	E	unknown	49211	GERMANY	Proper	03-04-2004 05:14:03	03-04-2004 05:14:03	0:00	1191410465	APNY	T-Systems	Invalid number format (incomplete number)
	E	unknown	493317046217	GERMANY	Proper	03-04-2004 05:14:01	03-04-2004 05:16:01	2:00	5051447123	APNY	T-Systems	Normal call clearing
	E	unknown	492419529687	GERMANY	Proper	03-04-2004 05:09:21	03-04-2004 05:10:48	1:27	8476126345	APNY	T-Systems	Normal call clearing

The result listing shows the origination number, the number dialed, the destination location, connect and disconnect times, duration, account and customer in the case of product usage, vendor in the case of normal vendor termination, and the call status while disconnecting, which is color-coded according to the table below. Select the View ( ) icon to go to a detailed page describing the call.

List of possible reasons for disconnect:

Reason	Color		Reason	Color
Normal completed call			Calling side error	
Normal uncompleted call			Called side error	
Call progress code			Network error	

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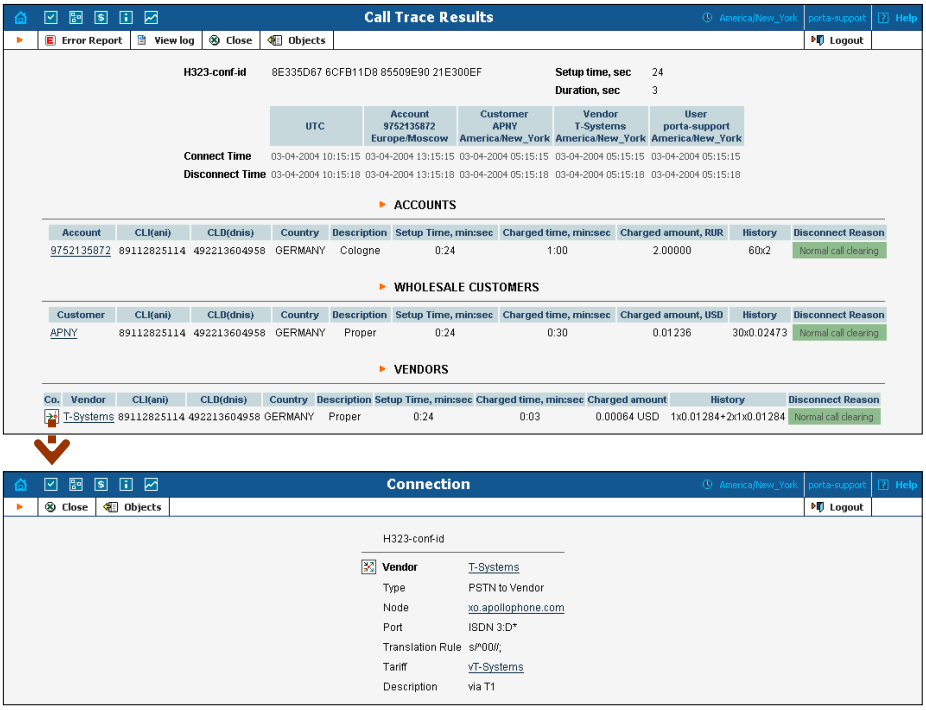
Call Trace detail

The detailed Call Trace Results page shows additional call details such as the h323-conf-id for the call and the setup time, as well as a detailed breakdown of the charges applied to each entity, accounts, resellers, and vendors. You may view the connection details for a particular vendor by selecting the Connection icon. On the subsequent connection detail page you may view all connections for a particular vendor by selecting the Connections icon.


Call Trace Results
America/New_York
porta-support
Help
Error Report
View log
Close
Objects
Logout
H323-conf-id
8E335D67 6CFB11D8 85509E90 21E300EF
Setup time, sec 24
Duration, sec 3
UTC
Account 9752135872 Europe/Moscow
Customer APNY America/New_York
Vendor T-Systems America/New_York
User porta-support America/New_York
Connect Time 03-04-2004 10:15:15 03-04-2004 13:15:15 03-04-2004 05:15:15 03-04-2004 05:15:15 03-04-2004 05:15:15
Disconnect Time 03-04-2004 10:15:18 03-04-2004 13:15:18 03-04-2004 05:15:18 03-04-2004 05:15:18 03-04-2004 05:15:18
ACCOUNTS
Account CLI(ani) CLD(dnis) Country Description Setup Time, min:sec Charged time, min:sec Charged amount, RUR History Disconnect Reason
9752135872 89112825114 492213604958 GERMANY Cologne 0:24 1:00 2.00000 60x2 Normal call clearing
WHOLESALE CUSTOMERS
Customer CLI(ani) CLD(dnis) Country Description Setup Time, min:sec Charged time, min:sec Charged amount, USD History Disconnect Reason
APNY 89112825114 492213604958 GERMANY Proper 0:24 0:30 0.01236 30x0.02473 Normal call clearing
VENDORS
Co. Vendor CLI(ani) CLD(dnis) Country Description Setup Time, min:sec Charged time, min:sec Charged amount History Disconnect Reason
T-Systems 89112825114 492213604958 GERMANY Proper 0:24 0:03 0.00064 USD 1x0.01284+2x1x0.01284 Normal call clearing
Connection
America/New_York
porta-support
Help
Close
Objects
Logout
H323-conf-id
Vendor T-Systems
Type PSTN to Vendor
Node xo.apollophone.com
Port ISDN 3:D*
Translation Rule s/^00//;
Tariff vT-Systems
Description via T1

Account Info

The Account Info page is provided for Help Desk staff responsible for answering questions by account holders. The interface requires that the account holder provide the Help Desk with an account ID or batch and control number. The Help Desk operator can also browse CDRs for this account by selecting the Browse CDRs icon.

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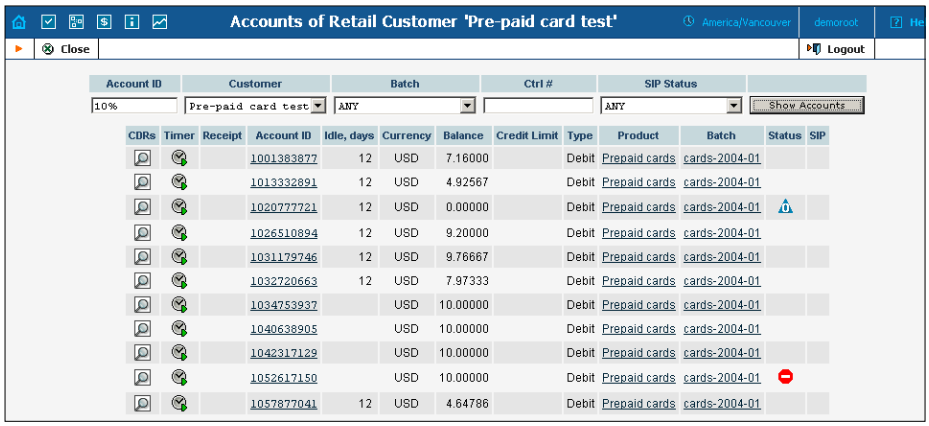
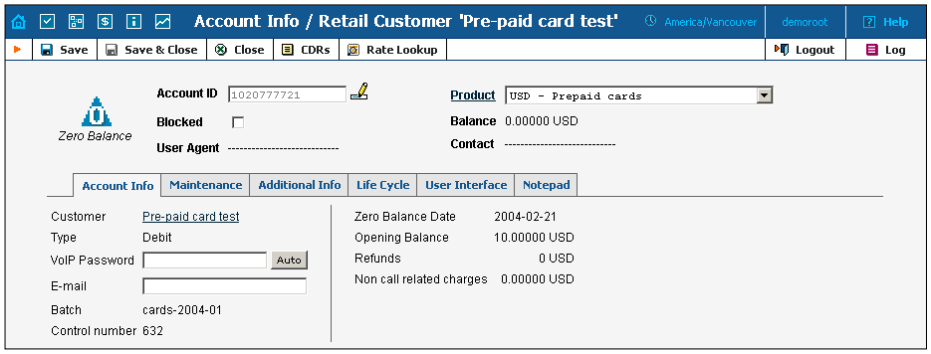


Once specified, clicking on **Account ID** will take the user to the Account Info for that account.



The majority of the account details on the Account Info page are read-only. This interface is similar to the one accessible via the customer's **Accounts**. The Help Desk staff has the ability to modify only the Web Password, VoIP Password, Account Balance, Time Zone, Redirect Number, Blocked Status, and Preferred Language. When making such changes, the Help Desk staff should also provide a comment detailing the reason for these changes (for example, "user unable to call due to network outage, credited $5"). Changes may be confirmed by selecting **Save** or **Save&Close**.

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6. Statistics

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Graphs

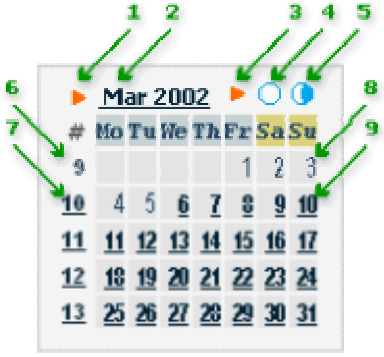
The default timeframe for all graphs is 30 hours. The dates above the graph are the boundary timeframe for the current graph. If the graph is shown in more than one color, a legend for color usage will be displayed under the graph. If there are two graphs, captions will be provided on the left. Usage of navigation is explained in the table below.

Icon	Description
	Zoom Out. Click the icon or the top part of the graph to see a 50% longer time interval.
	Zoom In. Click the icon or the bottom part of the graph to see a 50% shorter time interval and a more detailed graph.
	Back in time. Click the icon or the left part of the graph to move back in time by 50% of the current timeframe.
	Forward in time. Click the icon or the right part of the graph to move forward in time by 50% of the current timeframe.

Reports

The middle portion of the report screen is a one-year calendar. PortaBilling keeps reports for one year, after which time they are removed from the system. The current month is displayed in the bottom right-hand corner of the calendar.

Look at the following legend for the calendar:



1. If present, this arrow notifies the user that the report for this month is available for download by clicking the month link.
2. Three-letter abbreviation for the month, followed by the year.
3. If present, this arrow notifies the user that two semi-monthly reports are available for download by clicking the links on the right.

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4. Click this icon to download statistics for the first half of the month.
5. Click this icon to download statistics for the second half of the month.
6. Number of the week in the current year. No report was generated for this week, so there is no link.
7. Same as 6, but a report has been generated and may be downloaded by clicking the link.
8. Day of the month. No report has been generated. Link is inactive.
9. Days with linked reports are set off in bold and underscored. Click to download the report.

If a report is available, the corresponding link is set off in bold and underscored.

Note: Links are not displayed if the reports have not been configured.

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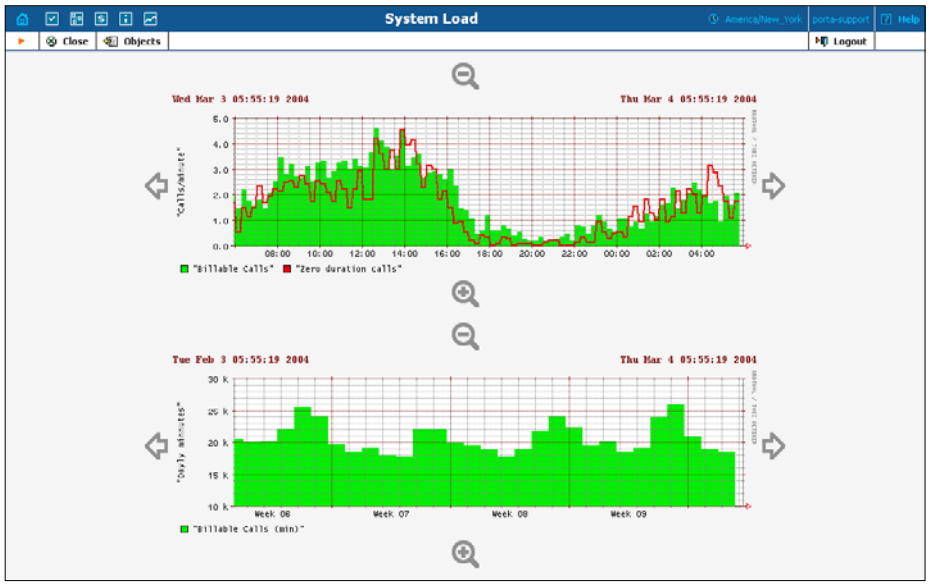
System Load

The System Load graph provides a high-level view of the status of the billing system in terms of the number of calls going through it and the number of CDR rows.



The **Calls/minute** graph at the top shows the number of calls, and is broken down into "Billable" and "Zero Duration" calls.
The **Daily minutes** graph shows the total call volume (in minutes) that passes through your system per day.

Database Load

The **Database Load** graph shows the load (in number of queries) and the number of active threads on the master and slave databases. This information may be useful in the event that database interactions seem slow, or in other debugging scenarios.

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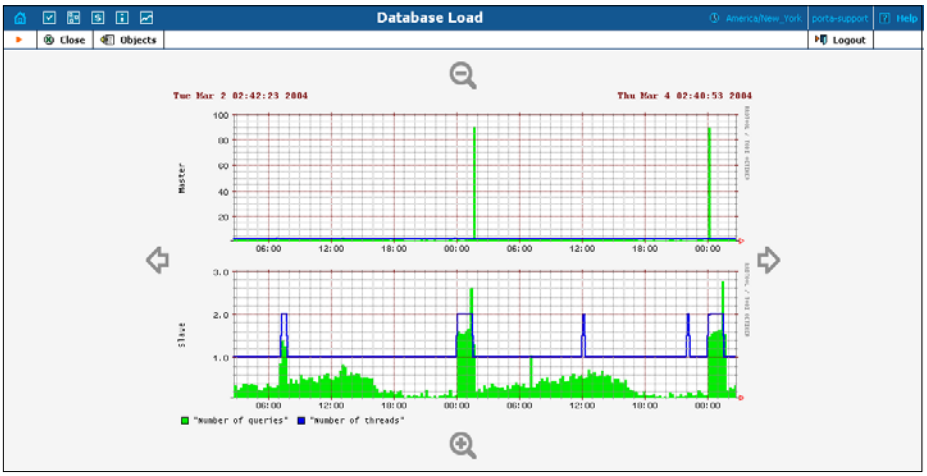
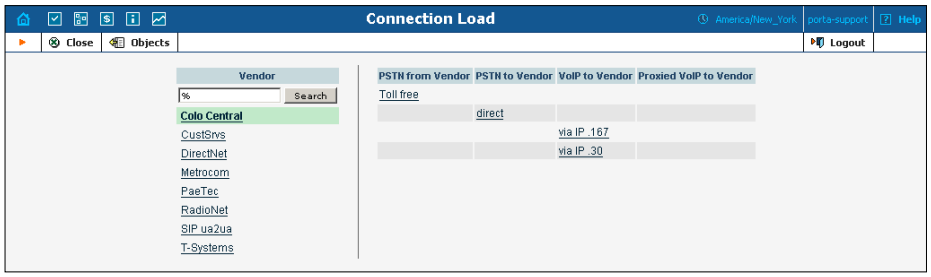


Connections

The Connection Load screen provides the user with access to load graphs for all connections set up in the system. To view the graph, select the vendor to whom the connection being searched has been assigned from the list on the left side of the screen. Also, the search feature may be used by entering the vendor's name in the search field and clicking the Search button. For a search wildcard, the symbol '%' can be used.

After locating the vendor, all the connections related to this vendor will be displayed on the right side of the screen, grouped similarly as on the Connection Management screen: PSTN from Vendor, PSTN to Vendor, VoIP to Vendor, and Proxied VoIP to Vendor. Click the description under the corresponding connection type to view the Load Graph for a given connection.



Defined in terms of connection threshold, the connection utilization graphs show the saturation of your connections. Connection Load displays such utilization, as well as showing the setup time and ASR.

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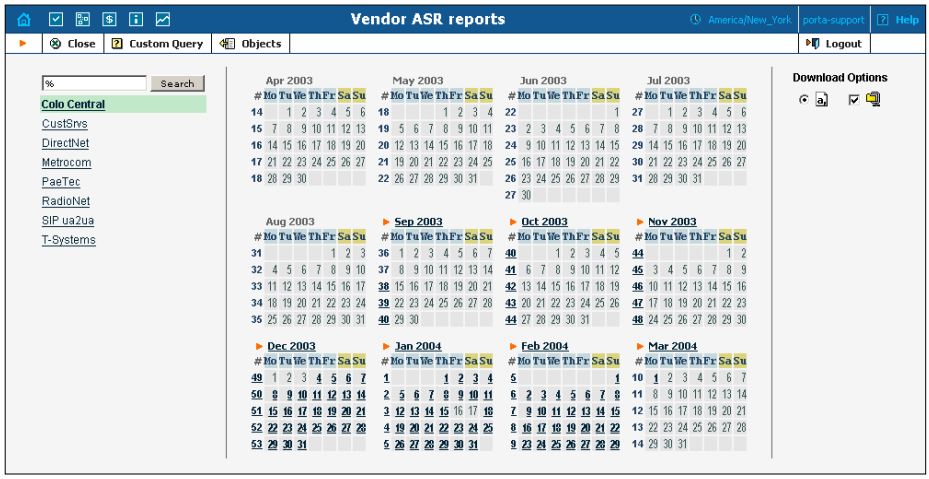
ASR

The Vendor ASR reports screen gives the user easy access to downloads of all ASR reports that have been set for the vendor. Reports for the desired vendor may be found by selecting the vendor from a list on the left side of the screen, or by entering the vendor's name in the search field and clicking the **Search** button. The wildcard symbol '%' may also be used for the search.

Download Options
The default report download format is CSV. Check the box next to the **ZIP** icon to download zipped CSV files.



Custom Query

The Custom Query utility, which can be accessed by clicking the **Custom Query** button, enables you to view ASR and cost/revenue information for all calls going from selected customer(s) to selected vendor(s). This query can also be filtered by destination and a precise time interval. The split selector allows the report to be divided into hourly and daily intervals.

Select a customer or vendor, or a destination, which may be specified exactly, or use a wildcard. (For example, all calls to England may be specified as "44%" in the destination field.) The date and time range for the search must be specified. To initiate the query, click the Show results button.

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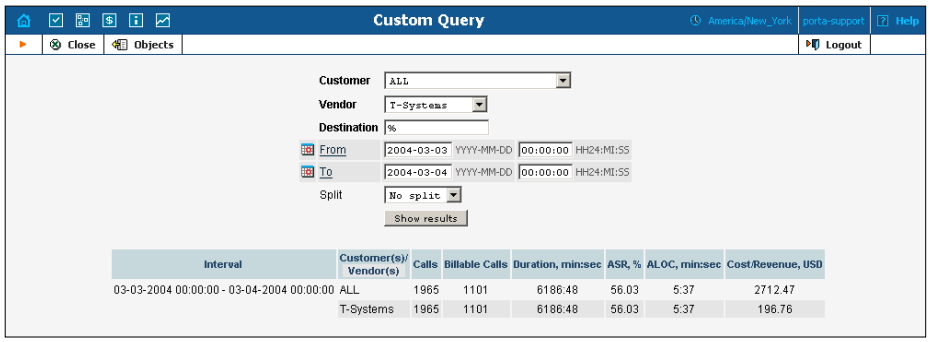

The results table contains two rows, one each for the customer and the vendor.

- Calls
- Billable Calls
- Duration, min:sec
- ASR (Average Success Rate)
- ALOC (Average Length of Call)
- Cost/Revenue, in PortaBilling owner's currency

Cost/Revenue

The Cost/Revenue Report screen allows the user to easily download all Cost/Revenue reports that have been generated in the system. Reports are grouped by the following call types:

- Inbound by Country (default)
- Inbound by Customer
- Outbound by Country
- Outbound by Vendor
- Inbound

The active selection is highlighted in green.

Vendor Reports

The Vendor Report screen allows the user to easily download all reports that have been set for the vendor. Reports for the desired vendor may be found by selecting the vendor from the list on the left side of the screen, or by entering the vendor's name in the search field and clicking the Search button. The wildcard symbol '%' can also be used.

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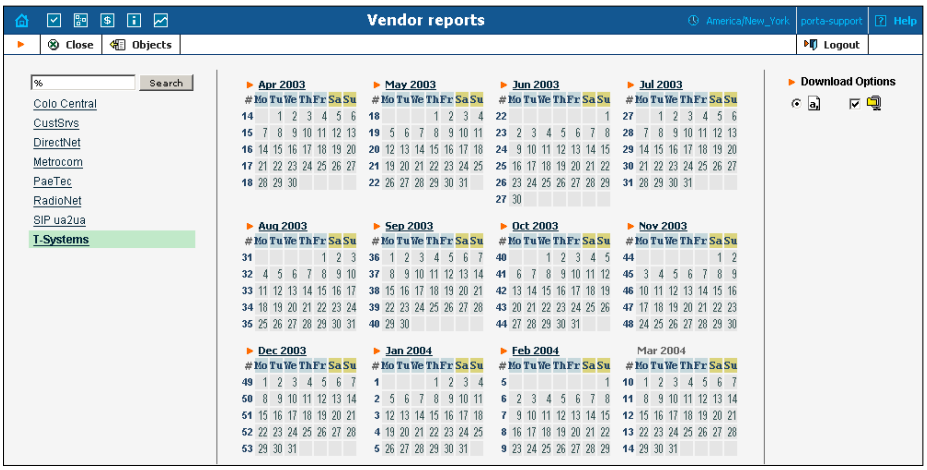

Customer Reports

The Customer Report screen allows the user to easily download all reports that have been set for the customer. Reports for the desired customer may be found by selecting it from the list of existing customers on the left side of the screen, or by entering the customer's name in the search field and clicking the Search button. The wildcard symbol '%' can also be used.

On-Net Reports

The On-Net Reports screen allows the user to easily download all available reports for on-net calls made by the system owner. The report periodicity can be set up on the **Company Info** screen -> Report Info Tab -> Reconciliation Period. (See Part I of this guide for more information.)

Invoices

The Invoices screen allows the administrator to view all invoices generated by the system in the current environment. The desired invoice can be found by its number. Groups of invoices can be searched by selecting a customer and a date range.

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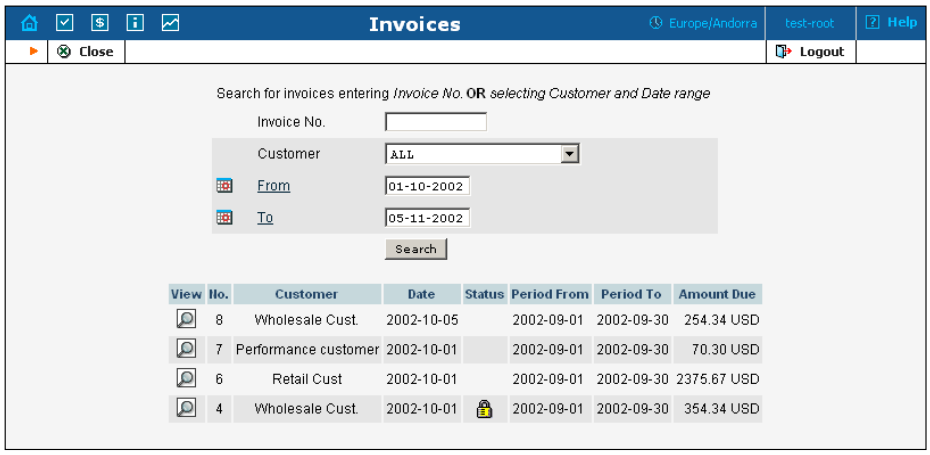

Select the **Preview** icon in the result list to view or print the selected invoice. The **Locked** icon appears when an invoice has been delivered to the customer and cannot be changed. An invoice is considered delivered when the customer receives an e-mail with the invoice attached, or clicks the Preview icon in the Invoice section of the customer self-provisioning interface. If the invoice is not locked, it will be automatically updated if the balance changes (re-costing of calls, for example); otherwise, a new invoice with re-costing adjustment will be generated.

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